

REPORT

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Save Energy and Water Kits 2016 Program Year Evaluation Report

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in partnership with Research into Action

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1 Executive Summary

1.1 Program Summary

The Save Energy and Water Kit Program (SEWKP) is a Duke Energy program that provides free energy and water efficiency kits to pre-selected households in the Duke Energy Progress (DEP) and Duke Energy Carolinas (DEC) jurisdictions. The kits include aerators for kitchen and bathroom sink faucets, one or two showerheads, and water heater insulating pipe tape.

1.2 Evaluation Objectives and Results

This report presents the results and findings of evaluation activities for DEP/DEC SEWKP conducted by the evaluation team, collectively Nexant Inc. and our subcontracting partner, Research into Action, for the program year of January – December 2016.

1.2.1 Impact Evaluation

The evaluation team conducted the evaluation as detailed in this report to estimate energy and demand savings attributable to the DEP and DEC Save Energy and Water Kit programs. The evaluation was divided into two research areas - to determine gross and net savings (or impacts). Gross impacts are energy and demand savings estimated at a participant's home that are the direct result of the homeowner's installation of a measure included in the SEWKP kit. Net impacts reflect the degree to which the gross savings are a result of the program efforts and funds.

Table 1-1 and Table 1-2 present the summarized findings of the impact evaluation for the DEP jurisdiction.

Table 1-1: 2016 DEP Energy Savings per Kit

Measurement	Reported	Realization Rate	Gross Verified	Net-to-Gross Ratio	Net Verified
Energy (kWh)	432.0	91.7%	396.1	93.4%	370.1
Demand (kW)	0.07	188.6%	0.133		0.124

Table 1-2: 2016 DEP Program Level Energy Savings

Measurement	Reported	Realization Rate	Gross Verified	Net-to-Gross Ratio	Net Verified
Energy (kWh)	12,162,634	91.7%	11,153,216	93.4%	10,418,681
Demand (kW)	1,985.2	188.6%	3,744.5		3,497.9

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The findings of the impact evaluation for the DEC jurisdiction are summarized in Table 1-3 and Table 1-4.

Table 1-3: 2016 DEC Energy Savings per Kit

Measurement	Reported	Realization Rate	Gross Verified	Net-to-Gross Ratio	Net Verified
Energy (kWh)	595.2	47.0%	279.6	93.2%	260.5
Demand (kW)	0.245	38.8%	0.095		0.089

Table 1-4: 2016 DEC Program Level Energy Savings

Measurement	Reported	Realization Rate	Gross Verified	Net-to-Gross Ratio	Net Verified
Energy (kWh)	19,669,692	47.0%	9,239,316	93.2%	8,608,979
Demand (kW)	8,101.2	38.8%	3,147.3		2,932.6

Gross verified energy and demand savings by measure and net to gross ratio details for both the DEP and DEC jurisdictions are presented in Figure 1-1 and Figure 1-2; Table 1-5 and Table 1-6, respectively.

Figure 1-1: 2016 DEP Gross Verified Energy Savings

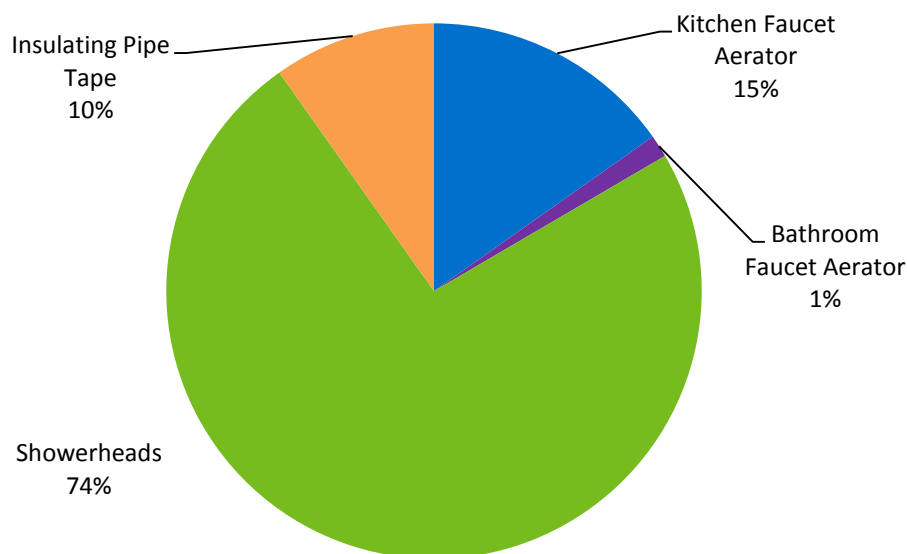


Table 1-5: DEP Program Year 2016 Verified Impacts by Measure

Measure	Gross Energy Savings per unit (kWh)	Gross Demand per unit (kW)	Free Ridership	Spillover	Net to Gross Ratio
1.5 GPM Showerhead	291.6	0.093	0.16	0.08	0.934
1.0 GPM Bathroom Faucet Aerator	5.4	0.003	0.15		
1.0 GPM Kitchen Faucet Aerator	60.3	0.032	0.13		
Insulating Pipe Tape*	38.8	0.004	0.10		
Total Kit Impacts	396.1	0.133	0.15	0.08	0.934

*Per package of pipe tape installed.

Figure 1-2: 2016 DEC Gross Verified Energy Savings

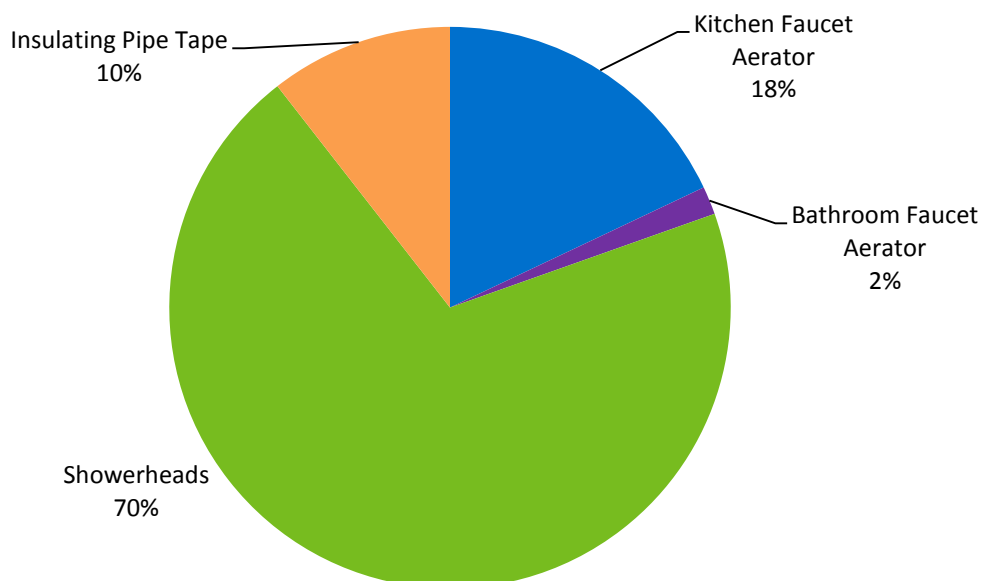


Table 1-6: DEC Program Year 2016 Verified Impacts by Measure

Measure	Gross Energy Savings per unit (kWh)	Gross Demand per unit (kW)	Free Ridership	Spillover	Net to Gross Ratio
1.5 GPM Showerhead	195.4	0.063	0.19	0.10	0.932
1.0 GPM Bathroom Faucet Aerator	4.5	0.002	0.10		
1.0 GPM Kitchen Faucet Aerator	50.2	0.027	0.13		
Insulating Pipe Tape	29.5	0.003	0.11		
Total Kit Impacts	279.6	0.095	0.17	0.10	0.932

*Per package of pipe tape installed.

1.2.2 Process Evaluation

The process evaluation assessed opportunities for improving the program's design and delivery in DEP and DEC service territories. It specifically documented participant experiences by investigating participating household responses to the kits and the extent to which the kits effectively motivate households to save energy.

The evaluation team reviewed program documents and conducted telephone and web surveys with households that received a kit (DEP n=131; DEC n=114). The team also conducted in-depth interviews with utility and implementation staff.

Program Successes

The 2016 DEP/DEC SEWKP evaluation found successes in the following areas:

Kit instructions are perceived as highly helpful among SEWKP participants. About four-fifths of participants in either jurisdiction (84% DEP; 82% DEC) said they read the instructional insert from their kit that offers detailed instructions on self-installing the measures, the majority of which said the instructions were highly helpful. These paper instructions are likely sufficient for most participants, as few respondents reported viewing the online instructional videos.

The program influenced household to install kit measures. Nearly all participating households installed at least one measure from the kit and the vast majority of measures, once installed, remained installed. Participants were highly influenced by the program to install kit measures, as demonstrated by low free ridership rates. Further, about one-third of respondents in either jurisdiction (30% DEP; 33% DEC) reported spillover actions.

Most participants are satisfied with kit items and report high satisfaction with the overall program. Ten percent or fewer of participants reported dissatisfaction with any of the specific measures they installed. Over four-fifths of participants in either jurisdiction (84% DEP; 86% DEC) reported they were highly satisfied with the overall program.

The kit size assignment algorithm is highly accurate. The kit size assignment algorithm assigns smaller kits to smaller homes (less than 1,500 square feet) and medium kits to larger homes (1,500 square feet or more). As a result, SEWKP typically delivers a useable number of units to most homes.

Program Challenges

The 2016 DEP/DEC SEWKP evaluation found some challenges in the following areas:

Insulating pipe tape is the least popular measure. Pipe tape was the least installed measure type, with less than half of participants in either jurisdiction (47% DEP; 40% DEC) reporting installing it.

Low water pressure is a significant contributor to dissatisfaction and uninstalls.

Complaints of excessively low water pressure were the primary drivers of dissatisfaction with and uninstallation of water saving measures. However, only a minority of participants (were dissatisfied with (2% DEP; 0% DEC) or uninstalled them (6% DEC; 0% DEC).

Inadequate size is a common barrier hindering aerator installation. Of those who did not install the kitchen faucet aerator, over one-third (39% DEP; 41% DEC) reported they did not install the measure because it did not fit on their faucet. Similarly, over one-third (38% DEC; 46% DEC) of respondents who did not install any of the bathroom faucet aerators cited sizing issues.

A sizable minority of participants reported having natural gas water heaters. While the program targets customer homes with electric water heat, the evaluation team found that 18% of DEP and 29% of DEC customers reported having non-electric water heaters in their homes.

Many items do not get installed, especially multi-count measures. Across the DEP and DEC jurisdictions, ISRs ranged from 23% to 63%. ISRs were lowest for multi-count measures.

Medium kits had lower ISRs on every measure. Across the DEP and DEC jurisdictions, medium kits had lower ISRs than small kits on every measure.

1.3 Evaluation Conclusions and Recommendations

Based on evaluation findings, the evaluation team concludes the following and provides several recommendations for program improvement:

Conclusion 1: The program model is highly successful: it leverages low-cost measures to foster energy savings that would not have happened otherwise. Duke Energy's easy process for requesting and receiving a kit with free energy and water saving items motivated thousands of customers to request and install energy saving measures in their home. Most participants installed at least one measure from the kit and the vast majority of measures, once installed, stayed installed. Participants were highly influenced by the program to install these kit

measures, as demonstrated by low free ridership rates. Further, about one-third of respondents in either jurisdiction reported spillover actions.

Recommendation: Continue using SEWKP to encourage Duke Energy customers to save energy and water.

Conclusion 2: The water saving measures' low flow water pressure results in some minor satisfaction and uninstallation issues. Complaints of excessively low water pressure were the primary drivers of item dissatisfaction and uninstallation. However, only a minority of participants was dissatisfied with or uninstalled water saving items.

Recommendation: Consider expanding participant-facing messaging around low-flow measures; water measure ISRs and satisfaction may increase if participants have better upfront expectations on the flow rates of the measures and better understand the energy saving benefits of low-flow fixtures.

Recommendation: Consider investigating alternative products that provide the same GPM as the current aerator and showerhead offerings but offer higher perceived water pressure.

Conclusion 3: Despite delivering a useable number of units to most homes, there may be cost- effectiveness benefits to reducing the number of items delivered. The kit size assignment algorithm works fairly well:

- Small and medium kit recipients largely got the appropriate number of kitchen and bathroom aerators, given the number of faucets in their home.
- However, more than half of small kit recipients have two or more showers in their home.

Nonetheless, many items do not get installed, especially multi-count measures:

- Recipients of either kit size installed one bathroom aerator and one showerhead on average.
- Medium kits had lower ISRs on every measure, suggesting that delivering too many items may overwhelm participants and consequently hinder installations.

Recommendation: Consider if there is a significant enough cost-effectiveness benefit to justify reducing the number of kit sizes and multi-count units offered. Reducing the number of items included in the kit, particularly the number of bathroom aerators provided, could increase ISRs and reduce program costs as the survey data reveals there is a negative relationship with number of kit items delivered and ISRs (that is, the more items Duke Energy provides, the lower the ISRs).

Conclusion 4: A high amount of non-electric water heater customers participated in the program. In total, the evaluation found that 18% of DEP and 29% of DEC customers in the

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program had non-electric water heaters. These saturations are comparable to the 2013 general population Duke Residential Appliance Saturation Survey which reflects non-electric water heat saturation of 25%.

Recommendation: For future program recruitment, Duke Energy should continue to review and refine its customer screening techniques to better filter non-electric water heater customers from the program's solicitation.

2 Introduction and Program Description

2.1 Program Description

2.1.1 Overview

The Save Energy and Water Kit Program (SEWKP) is a Duke Energy program that provides free energy and water efficiency kits to pre-selected households in Duke Energy Progress (DEP) and Duke Energy Carolinas (DEC) territory. The kits include aerators for kitchen and bathroom sink faucets, one or two showerheads, and water heater insulating pipe tape.

2.1.2 Energy Efficiency Kit Measures

Table 2-1 lists the kit's contents included in the evaluation scope. There are two kit sizes, which dictate the number of showerheads and bathroom aerators the participant receives. In addition to the measures below, the kit includes plumbing tape, a rubber gasket opener to remove old aerators and showerheads, and an instructional insert that has detailed installation instructions. Duke Energy has additional installation instruction information available on their website.

Table 2-1: 2016 Kit Measures

Measures	Small Kit Count	Medium Kit Count
1.5 GPM Showerhead	1 low-flow showerhead	2 low-flow showerheads
1.0 GPM Bathroom Faucet Aerator	2 low-flow faucet aerators	4 low-flow faucet aerators
0.5/1.0/1.5 (adjustable) GPM Kitchen Faucet Aerator	1 low-flow kitchen aerator	1 low-flow kitchen aerator
Insulating Pipe Tape (2 inches wide, 15 feet long)	1 roll of pipe tape	1 roll of pipe tape

2.2 Program Implementation

2.2.1 Participant Identification and Recruitment

Every month Duke Energy's internal analytics department identifies households to recruit into the program: they look through customer accounts for single family electric-only accounts that have not participated in SEWKP or any other programs with similar measures (specifically, the Energy Efficiency Education in Schools and Home Energy House Call programs). Pre-selected households are then assigned either a small or medium kit based on household square footage data. Next, Duke Energy mails business reply cards (BRC) to all pre-selected households. Simultaneously, Duke Energy sends the implementer – Energy Federation, Inc. (EFI) – a list of pre-selected accounts that received the BRC that month. Households that receive the BRC simply detach the reply form and put it back in the mail (postage is pre-paid). These BRC reply forms are mailed to EFI. Upon receipt, EFI scans the unique barcodes on the BRCs to register

responding households as participants. Alternatively, customers may also call a toll free number, provided on the BRC, to confirm eligibility and request their free kit. EFI then ships the appropriate kit (small or medium) to registered households.

2.2.2 Participation

For the defined evaluation period of January 2016 through December 2016, the program recorded a total of 63,876 kit recipients (28,799 kits distributed in DEP; 35,077 kits distributed in DEC). During survey recruitment of customers, 2.2% of sampled DEP participants and 5.8% of sampled DEC participants notified the evaluation team that their kits never arrived. The causation of this reported rate of non-received kits could not be fully identified by the evaluation team. Due to the program design of soliciting customers via a program mailer, customer address accuracy is expected to be very high for the program. However, this does not account for issues related to third party delivery failure or inaccurate customer recall.

2.3 Key Research Objectives

Over-arching project goals will follow the definition of impact evaluation established in the “Model Energy-Efficiency Program Impact Evaluation Guide – A Resource of the National Action Plan for Energy Efficiency,” November 2007:

“Evaluation is the process of determining and documenting the results, benefits, and lessons learned from an energy-efficiency program. Evaluation results can be used in planning future programs and determining the value and potential of a portfolio of energy-efficiency programs in an integrated resource planning process. It can also be used in retrospectively determining the performance (and resulting payments, incentives, or penalties) of contractors and administrators responsible for implementing efficiency programs.”

Evaluation has two key objectives:

- 1) To document and measure the effects of a program and determine whether it met its goals with respect to being a reliable energy resource.
- 2) To help understand why those effects occurred and identify ways to improve the program.

2.3.1 Impact

As part of evaluation planning, the evaluation team outlined the following activities to assess the impacts of the DEP and DEC SEWKP:

- Quantify accurate and supportable energy (kWh) and demand (kW) savings for energy efficient measures implemented in participants’ homes;
- Assess the rate of free riders from the participants’ perspective and determine spillover effects;

- Benchmark verified measure-level energy impacts to applicable technical reference manual(s) and other Duke-similar programs in other jurisdictions.

2.3.2 Process

The process evaluation assessed opportunities for improving the design and delivery of the program in DEP and DEC service territories. It specifically documented participant experiences by investigating participant responses to the energy efficiency kits and the extent to which the kits effectively motivate households to save energy and water.

The evaluation team assessed several elements of the program delivery and customer experience, including:

Motivation:

- What motivated participants to request and install the measures in the kit?
- In what ways, if any, did the program motivate participants to adopt new energy and water saving behaviors?

Program experience and satisfaction:

- How satisfied are participants with the overall program experience and kit items in terms of ease of use and measure quality?

Challenges and opportunities for improvement:

- Are there any inefficiencies or challenges with the delivery of the program?
- Are there any measures that have particularly low installation rates? If so, why?
- Are there any measures that have particularly high uninstallation rates? If so, why?

Participant household characteristics:

- What are demographic characteristics of those who received the kits?

2.4 Evaluation Overview

The evaluation team divided its approach into key tasks to meet the goals outlined:

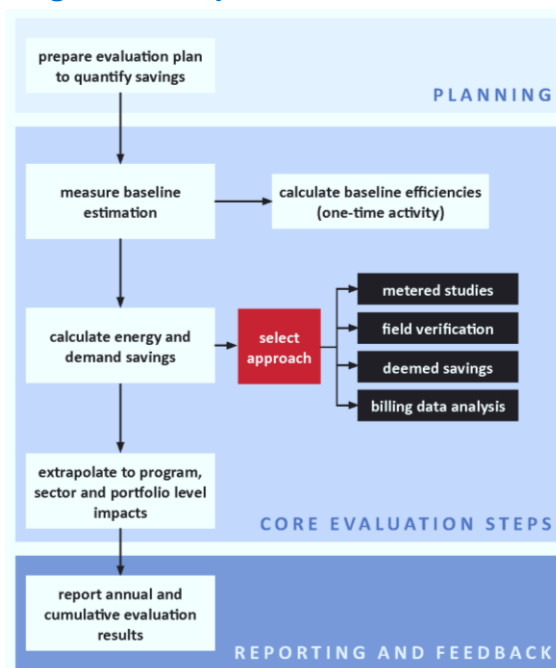
- **Task 1** – Develop and manage evaluation work plan to describe the processes that will be followed to complete the evaluation tasks outlined in this project;
- **Task 2** – Conduct a process review to determine how successfully the programs are being delivered to participants and to identify opportunities for improvement;
- **Task 3** – Verify gross and net energy and peak demand savings resulting from SEWKP through verification activities of a sample of 2016 program participants.

2.4.1 Impact Evaluation

The primary determinants of impact evaluation costs are the sample size and the level of rigor employed in collecting the data used in the impact analysis. The accuracy of the study findings is in turn dependent on these parameters. Techniques that we used to conduct our evaluation, measurement, and verification (EM&V) activities, and to meet the goals for this evaluation, included telephone and web-based surveys with program participants, best practice review, and interviews with implementation and program staff.

Figure 2-1 demonstrates the principal evaluation team steps organized through planning, core evaluation activities, and final reporting.

Figure 2-1: Impact Evaluation Process



The evaluation is generally comprised of the following steps, which are described in further detail throughout this report:

- **Participant Surveys:** The file review for all sampled and reviewed program participation concluded with a telephone and/or web-based survey with the participants. Table 2-2 below summarizes the number of surveys and on-site inspections completed. The samples were drawn to meet a 90% confidence and 10% precision level based upon the expected and actual significance (or magnitude) of program participation, the level of certainty of savings, and the variety of measures.

- **Calculate Impacts:** Data collected via surveys enabled the evaluation team to calculate gross verified energy and demand savings¹ for each measure.
- **Estimate Net Savings:** Net impacts are a reflection of the degree to which the gross savings are a result of the program efforts and incentives. The evaluation team estimated free-ridership and spillover based on self-report methods through surveys with program participants. The ratio of net verified savings to gross verified savings is the net-to-gross ratio as an adjustment factor to the reported savings.

2.4.2 Process Evaluation

Process evaluation examines and documents:

- Program operations
- Stakeholder satisfaction
- Opportunities to improve the efficiency and effectiveness of program delivery

To satisfy the evaluation, measurement, and verification (EM&V) objectives for this research effort, the evaluation team reviewed program documents and conducted telephone and web surveys with participating households who received a kit. The team also held in-depth interviews (IDI) with utility and implementation staff. Table 2-2 provides a summary of the activities the evaluation team conducted as part of the DEP/DEC SEWKP process and impact evaluation.

Table 2-2: DEP/DEC SEWKP Summary of Evaluation Activities

Target Group	2016 Survey Population	Sample	Confidence /Precision	Method
Impact Activities				
DEP Participants	28,799	131	90/7.2	Telephone/Web Survey
DEC Participants	35,077	114	90/7.7	Telephone/Web Survey
Process Activities				
DEP Participants	28,799	131	90/7.2	Telephone/Web Survey
DEC Participants	35,077	114	90/7.7	Telephone/Web Survey
Duke Energy Program Staff	N/A	1	N/A	Telephone IDI
Implementer Staff: EFI	N/A	1	N/A	Telephone IDI

¹ Due to the small size of the measure and overall program impacts relative to annual consumption, a utility bill regression analysis was not feasible as such an analysis cannot effectively isolate the impacts from inherent noise in the billing data in absence of a randomized control trial. Therefore, the impact analysis relied on engineering algorithms to assess the program's savings impacts.

3 Impact Evaluation

3.1 Methodology

The evaluation team's impact analysis focused on the energy and demand savings attributable to the SEWKP for the period of January 2016 through December 2016. The evaluation was divided into two research areas: to determine gross and net savings (or impacts). Gross impacts are energy and demand savings estimated at a participant's home that are the direct result of the homeowner's installation of a measure included in the program-provided energy saving kit. Net impacts are a reflection of the degree to which the gross savings are a result of the program efforts and funds. The evaluation team verified energy and demand savings attributable to the program by conducting the following impact evaluation activities:

- Review of DEP and DEC participant databases.
- Completion of telephone and web-based surveys to verify key inputs into savings calculations.
- Estimation of gross verified savings using primary data collected from participants.
- Comparison of the gross-verified savings to program-evaluated results to determine kit-level realization rates.
- Application of attribution survey data to estimate net-to-gross ratios and net-verified savings at the program level.

3.2 Database and Historical Evaluation Review

Duke Energy provided the evaluation team with a program database for the SEWKP participation within each jurisdiction. The program database provided participant contact information including account number, address, phone number, email address (if available), and whether or not the participant was willing to be contacted. Because Duke Energy was able to provide both phone numbers and email addresses, we were able to design a sampling approach that could take advantage of both phone and web-based surveying.

The evaluation team conducted a benchmarking review of the uncertainty of ex-ante savings estimates by comparing multiple technical reference manuals (TRMs) and SEWK evaluations conducted in select Duke Energy jurisdictions. The details of the benchmarking review are referenced in Table 3-1. The listed savings values include the impact of in-service rates.

Table 3-1: Comparison of Ex-Ante SEWKP Energy Savings to Peer Group Estimates

Measure	Duke Energy Carolinas 2015 SEWKP evaluation ¹	Duke Energy Progress SEWKP ex ante savings ²	Mid-Atlantic 2016 TRM ³	Indiana 2012 TRM ⁴	Texas 2015 TRM ⁵	Pennsylvania 2016 TRM ⁶
1.5 GPM Showerhead	293.87	143.00	296.63	71.59	340.26	327.96
1.0 GPM Bathroom Faucet Aerator	6.45	73.00	37.63	22.44	61.59	21.69
Adjustable Kitchen Faucet Aerator	183.37	61.00	37.63	33.66	61.59	130.73
Insulating Pipe Tape	111.50	155.00 ⁷	111.22	111.42	35.74	47.15

¹Duke Energy Carolinas Save Energy and Water Kit Program evaluation. The Cadmus Group, revised April, 2016.

²Duke Energy provided.

³Mid-Atlantic Technical Reference Manual version 6.0. May, 2016.

⁴Indiana Technical Reference Manual, version 1.0. December, 2012.

⁵Texas Technical Reference Manual, version 3.0, Volume 2 Residential Measures. April, 2015.

⁶State of Pennsylvania Technical Reference Manual. June, 2016.

⁷DEP ex ante savings for pipe insulation based on an assumed installation of five feet of hot water pipe tape.

While Table 3-1 does illustrate variation in deemed savings among each source for each given measure, much of this variation reflects different in-service rate and water heat fuel type assumptions. Also of note is that the Mid-Atlantic, Indiana, and Texas TRMs do not differentiate parameter assumptions between bathroom and kitchen faucet aerators. For this reason, the evaluation team ultimately used assumptions outlined by the Pennsylvania TRM to capture different usage patterns between each aerator location. All other parameters not mined from the participant survey generally relied on the Mid-Atlantic TRM assumptions.

3.3 Sampling Plan and Achievement

To provide representative results and meet program evaluation goals, a sampling plan was created to guide all evaluation activity. A random sample was created to target 90/10 confidence and precision at the program level across both jurisdictions assuming a coefficient of variation (C_v) equal to 0.5.

3.3.1 DEP Sample

After reviewing the program database, we identified a population of 28,799 participants within our defined evaluation period. Based on this population, the evaluation team established sub-sample frames for phone and web-based survey administration. As illustrated in Table 3-2 below, we completed a total of 131 surveys. This sample size resulted in an achieved confidence and precision of 90/7.2.

Table 3-2: DEP Impact Sampling

Survey Mode	Sample Frame	Sampled Participants	Achieved Confidence/ Precisions
Phone	900 ¹	37	90/7.2
Web-based	1,387	94	
Total	2,287	131	

¹The total desired phone quota was completed before exhausting the sample frame. A total of 281 calls were dialed.

3.3.2 DEC Sample

The evaluation team identified a population of 35,077 participants within our defined evaluation period. Based on this population, we again established sub-sample frames for phone and web-based survey administration. As illustrated in Table 3-3 below, we completed a total of 114 surveys. This sample size resulted in an achieved confidence and precision of 90/7.7.

Table 3-3: DEC Impact Sampling

Survey Mode	Sample Frame	Sampled Participants	Achieved Confidence/ Precisions
Phone	900 ¹	34	90/7.7
Web-based	1,613	80	
Total	2,513	114	

¹The total desired phone quota was completed before exhausting the sample frame. A total of 260 calls were dialed.

3.4 Description of Analysis

3.4.1 Telephone and web-based surveys

The evaluation team performed telephone and web-based surveys to gain key pieces of information used in the savings calculations. Results of the completed surveys were used to inform our program-wide assumptions as detailed in Table 3-4.

Table 3-4: Participant Data Collected and Used for Analysis

Measure	Data Collected	Assumption
1.5 GPM Showerhead 1.0 GPM Bathroom Faucet Aerator Adjustable Kitchen Faucet Aerator	Units Installed	In-Service Rate
	Units Later Removed	
	Hot Water Fuel Type	% Electric DHW
	Adjustable Aerator Flow Rate	GPM Installed
	Frequency of Showers	Hot Water Consumption
	Duration of Showers	
Insulating Pipe Tape	Pipe Tape Used	In-Service Rate
	Pipe Tape Removed	
	Hot Water Fuel Type	% Electric DHW
	Length of Insulated Pipe	Pipe Length

3.4.2 In-Service Rate

The in-service rate (ISR) represents the ratio of equipment installed and operable to the total pieces of equipment distributed and eligible for installation. For example, if 15 telephone surveys were completed for customers receiving 1 bathroom aerator each, and five customers reported to still have the aerator installed and operable, the ISR for this measure would be five out of 15 or 33%. In some instances equipment was installed but may have been removed later due to homeowner preferences. In these cases the equipment is no longer operable and therefore contributes negatively to the ISR. In-service rates for each measure from all eligible survey respondents are detailed in Table 3-5 and Table 3-6.

Table 3-5: DEP SEWKP In-Service Rates

Measure	Distributed	Installed	Removed	ISR
1.5 GPM Showerhead	232	126	11	50%
1.0 GPM Bathroom Faucet Aerator	464	137	8	28%
Adjustable Kitchen Faucet Aerator	131	64	6	44%
Insulating Pipe Tape*	131	52	1	39%

*Quantity of pipe tape packages.

Table 3-6: DEC SEWKP In-Service Rates

Measure	Distributed	Installed	Removed	ISR
1.5 GPM Showerhead	193	96	9	45%
1.0 GPM Bathroom Faucet Aerator	386	96	5	24%
Adjustable Kitchen Faucet Aerator	114	50	5	39%
Insulating Pipe Tape*	114	35	0	31%

*Quantity of pipe tape packages.

3.4.3 Faucet Aerators

The Save Energy and Water Kit contained one kitchen faucet aerator and multiple bathroom faucet aerators. Participants receiving a small kit received two bathroom faucet aerators; those qualifying for a medium kit received four bathroom faucet aerators. The equations below outline the algorithms utilized to estimate savings accrued by the faucet aerator measures with parameters defined in Table 3-7. The algorithm used to estimate aerator impacts is based on the Pennsylvania TRM ².

Equation 3-1: Faucet Aerator Energy Savings

$$\Delta kWh = ISR \times ELEC \times \left[\frac{\Delta GPM \times T_{person/day} \times N_{persons} \times 365 \frac{days}{year} \times DF \times \Delta T \times 8.3 \frac{BTU}{gal \cdot ^\circ F}}{\#_{faucets} \times 3,412 \frac{BTU}{kWh} \times RE} \right]$$

Equation 3-2: Faucet Aerator Demand Savings

$$\Delta kW = ETDF \times \Delta kWh$$

Table 3-7: Inputs for Faucet Aerator Measures Savings Calculations

Input	Units	DEC Value*	DEP Value*	Source
ISR	N/A	Bath: 24% Kitchen: 39%	Bath: 28% Kitchen: 44%	Survey responses
ELEC	N/A	Bath: 70% Kitchen: 80%	Bath: 81% Kitchen: 85%	Survey responses
ΔGPM	GPM	Bath: 1.2 Kitchen: 1.21		Product specification sheet and survey responses compared against federal code minimum
$T_{person/day}$	Minutes	Bath: 1.6 Kitchen: 4.5		Pennsylvania 2016 TRM
$N_{persons}$	Persons	Bath: 2.4 Kitchen: 2.5	Bath: 2.5 Kitchen: 2.5	Survey responses
DF	N/A	Bath: 90% Kitchen: 75%		Pennsylvania 2016 TRM
ΔT	°F	Bath: 19.1 Kitchen: 19.1		Mid-Atlantic 2016 TRM
$\#_{faucets}$	Units	Bath: 2.6	Bath: 3.1	Survey responses

² The prior evaluation conducted for DEC SEWKP relied on the Mid-Atlantic TRM. The evaluation team opted to use the Pennsylvania TRM as it provides a more comprehensive algorithm and differentiates between bathroom aerator and kitchen aerator assumptions.

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Input	Units	DEC Value*	DEP Value*	Source
		Kitchen: 1.1	Kitchen: 1.1	
ETDF	N/A	Bath: 0.00053 Kitchen: 0.00053		Pennsylvania 2016 TRM
RE	N/A	98%		Mid-Atlantic 2016 TRM

*Parameter values are estimated based on participants who installed the measure. For example, the water heat saturation is representative of participants who installed the faucet aerator as opposed to the full sample of participants which would include participants who did not install a faucet aerator.

The evaluation team determined that the 2016 Pennsylvania's TRM provided the most applicable calculations by differentiating between kitchen and bathroom water use and providing more comprehensive algorithms. Where the Mid-Atlantic 2016 TRM made appropriate distinctions, the evaluation team used the Mid-Atlantic parameter assumptions due to its geographic relevance to the DEP and DEC territory. However, where the Mid-Atlantic TRM lacked granularity, the evaluation team elected to use the Pennsylvania TRM as the secondary data source for estimating savings.

3.4.4 Showerheads

The Save Energy and Water Kit contained multiple low-flow showerheads with the quantity depending on the size of the kit received. Participants receiving a small kit received one showerhead; those qualifying for a medium kit received two showerheads. The equations below outline the algorithms utilized to estimate savings accrued by the faucet aerator measures with parameters defined in Table 3-8. The algorithm used to estimate showerhead impacts is based on the Pennsylvania TRM.

Equation 3-3: Showerhead Energy Savings

$$\Delta kWh = ISR \times ELEC \times \left[\frac{\Delta GPM \times T_{person/day} \times N_{persons} \times 365 \frac{days}{year} \times N_{showers-day} \times \Delta T \times 8.3 \frac{BTU}{gal \cdot ^\circ F}}{3,412 \frac{BTU}{kWh} \times RE} \right]$$

Equation 3-4: Showerhead Demand Savings

$$\Delta kW = ETDF \times \Delta kWh$$

Table 3-8: Inputs for Showerhead Savings Calculations

Input	Units	DEC Value*	DEP Value*	Source
ISR	N/A	45%	50%	Survey responses
ELEC	N/A	74%	83%	Survey responses
ΔGPM	GPM	1.0		Product specification sheet compared against federal code minimum
$T_{person/day}$	Minutes	7.9	9.4	Survey responses
$N_{persons}$	Persons	2.3	2.5	Survey responses

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Input	Units	DEC Value*	DEP Value*	Source
N _{showers-day}	Persons	0.8	0.8	Survey responses
ΔT	°F	44.1		Mid-Atlantic 2016 TRM
ETDF	N/A	0.00032		Pennsylvania 2016 TRM
RE	N/A	98%		Mid-Atlantic 2016 TRM

*Parameter values are estimated based on participants who installed the measure. For example, the water heat saturation is representative of participants who installed the showerhead as opposed to the full sample of participants which would include participants who did not install a showerhead.

The evaluation team determined that the 2016 Pennsylvania's TRM provided the most applicable and rigorous algorithm. However, we did rely on the Mid-Atlantic 2016 TRM for parameter assumptions that were more geographically relevant to the DEP and DEC territory.

3.4.5 Insulating Pipe Tape

All participants received a 15 foot roll of insulating pipe tape with their kit. To estimate the impacts resulting from the installation of the pipe tape measure, the evaluation team used the algorithms presented below. The algorithm used to estimate pipe wrap impacts is based on the Mid-Atlantic TRM.

Equation 3-5: Insulating Pipe Tape Energy Savings

$$\Delta kWh = ISR \times ELEC \times \frac{\left(\frac{1}{R_{ex}} - \frac{1}{R_{new}}\right) \times L \times C \times \Delta T \times 8,760}{\eta_{DHW} \times 3,413}$$

Equation 3-6: Insulating Pipe Tape Demand Savings

$$\Delta kW = \frac{\Delta kWh}{8,760}$$

Table 3-9: Inputs for Insulating Pipe Tape Savings Calculations

Input	Units	DEC Value*	DEP Value*	Source
ISR	N/A	31%	39%	Survey Responses
ELEC	N/A	74%	78%	Survey Responses
R _{ex}	N/A	1.00		Federal Code Minimum
R _{new}	N/A	3.00		Product Sheet Specification
L	Feet	5.8	5.7	Survey Responses**
C	Feet	0.20		Mid-Atlantic 2016 TRM (Average of 1/2" and 3/4" pipe)
ΔT	°F	65.0		Mid-Atlantic 2016 TRM
η _{DHW}	N/A	0.98		Mid-Atlantic 2016 TRM
ETDF	N/A	0.00011		Mid-Atlantic 2016 TRM (Calculated)

*Parameter values are estimated based on participants who installed the measure. For example, the water heat saturation is representative of participants who installed the pipe tape as opposed to the full sample of participants which would include participants who did not install pipe tape.

**Participant-provided estimated lengths of hot water pipe covered by the pipe tape was used to estimate verified savings.

Reported savings for this measure assumes five feet of pipe is covered.

Through a combination of participant survey responses as well as TRM and other deemed values, we estimated the parameter inputs presented above in Table 3-9.

3.5 Targeted and Achieved Confidence and Precision

We developed the SEWKP evaluation plan with the goal of achieving a target of 10% relative precision at the 90% confidence interval across both jurisdictions at the program level. Due to a high response rate from the web-based surveys, the evaluation team was able to surpass this target and achieve a high level of statistical precision for both jurisdictions. The final DEP sample yielded a relative precision of +/- 7.2% at the 90% confidence level while the DEC sample yielded a relative precision of +/- 7.7% at the 90% confidence level (Table 3-10).

Table 3-10: Targeted and Achieved Confidence and Precision

Program	Targeted Confidence/Precision	Achieved Confidence/Precision
DEP SEWKP	90/10.0	90/7.2
DEC SEWKP		90/7.7

3.6 Results

3.6.1 DEP findings

Measure-level and kit-level energy savings values for the DEP jurisdiction are detailed in Figure 3-1 and Table 3-11.

Figure 3-1: 2016 DEP Gross Verified Energy Savings

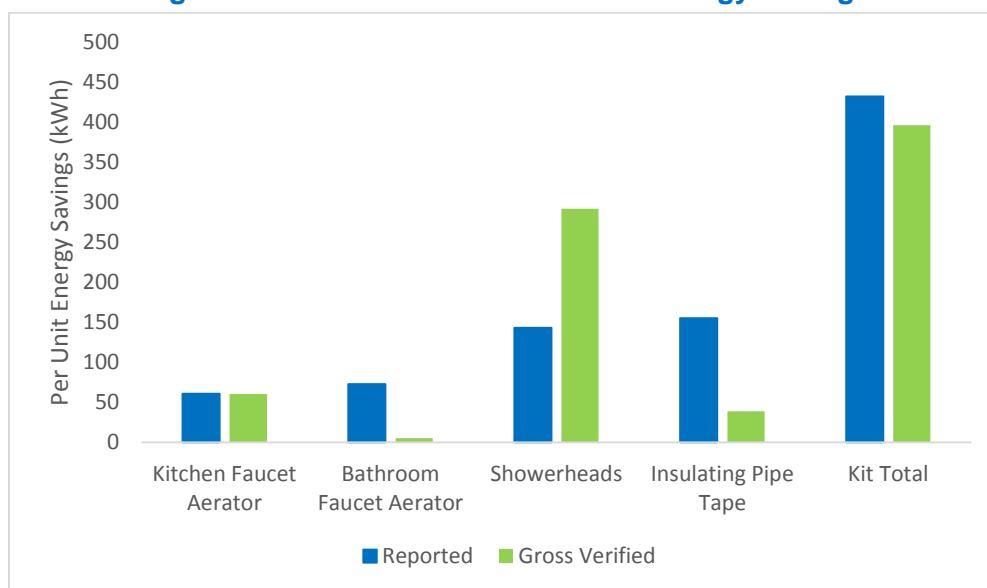


Table 3-11: DEP Measure-Level Reported and Verified Gross Energy Savings

Measure	Reported Energy Savings, per unit (kWh)	Realization Rate	Verified Gross Energy Savings, per unit (kWh)	Total Verified Gross Energy Savings (kWh)
Low-flow Showerhead (1.5 GPM)	143.0	203.9%	291.6	8,210,886
Low-flow Bathroom Aerator (1.0 GPM)	73.0	7.4%	5.4	151,412
Low-flow Kitchen Aerator (1.0 GPM)	61.0	98.8%	60.3	1,697,285
Insulating Pipe Tape*	155.0	25.1%	38.8	1,093,634
Total	432.0	91.7%	396.1	11,153,216

*Reported savings for pipe tape based on an assumed installation of five feet of tape.

Measure-level and kit-level demand savings are detailed in Table 3-12.

Table 3-12: DEP Measure-Level Reported and Verified Demand Gross Savings

Measure	Reported Demand Savings, per unit (kW)	Realization Rate	Verified Gross Demand Savings, per unit (kW)	Total Verified Gross Demand Savings (kW)
Low-flow Showerhead (1.5 GPM)	0.03	285.3%	0.093	2,632.0
Low-flow Bathroom Aerator (1.0 GPM)	0.02	17.2%	0.003	80.9
Low-flow Kitchen Aerator (1.0 GPM)	0.01	230.7%	0.032	906.8
Insulating Pipe Tape*	0.01	63.1%	0.004	124.8
Total	0.07	188.6%	0.133	3,744.5

*Reported savings for pipe tape based on an assumed installation of five feet of tape.

The impact evaluation for the 2016 program resulted in a program energy realization rate of 91.7% and a demand realization rate of 188.6% as presented in Table 3-13.

Table 3-13: 2016 DEP Energy Savings per Kit

Measurement	Reported	Realization Rate	Gross Verified
Energy (kWh)	432.0	91.7%	396.1
Demand (kW)	0.07	188.6%	0.133

Table 3-14 presents the reported and verified energy and demand savings for the 2016 program year.

Table 3-14: 2016 DEP Program Level Energy Savings

Measurement	Reported	Realization Rate	Gross Verified
Energy (kWh)	12,162,634	91.7%	11,153,216
Demand (kW)	1,985.2	188.6%	3,744.5

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3.6.2 DEC findings

Measure-level and kit-level energy savings values for the DEC jurisdiction are detailed in Figure 3-2 and Table 3-15.

Figure 3-2: 2016 DEC Gross Verified Energy Savings

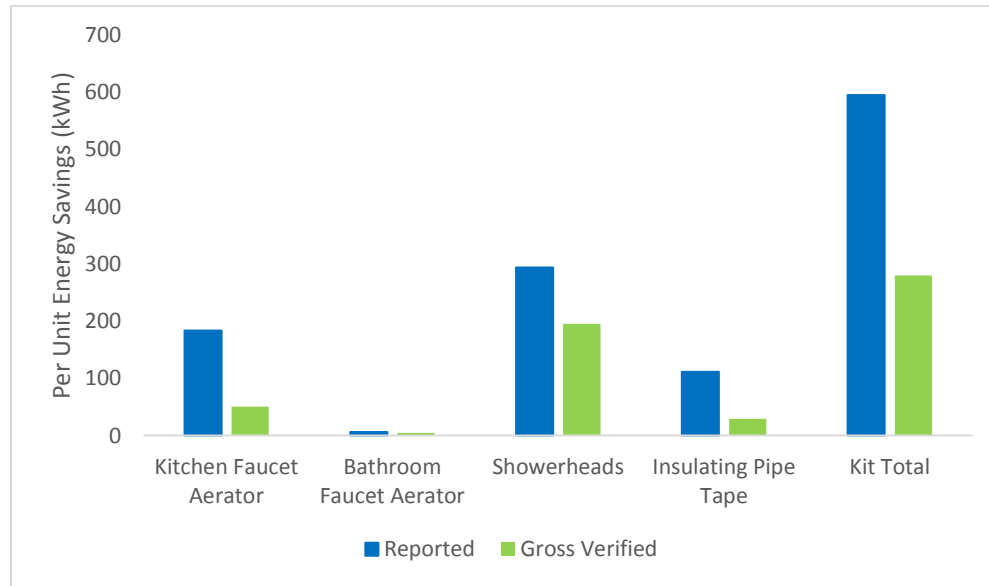


Table 3-15: DEC Measure-Level Reported and Verified Gross Energy Savings

Measure	Reported Energy Savings, per unit (kWh)	Realization Rate	Verified Gross Energy Savings, per unit (kWh)	Total Verified Gross Energy Savings (kWh)
Low-flow Showerhead (1.5 GPM)	293.9	66.5%	195.4	6,456,514
Low-flow Bathroom Aerator (1.0 GPM)	6.5	70.2%	4.5	149,610
Low-flow Kitchen Aerator (1.0 GPM)	183.4	27.4%	50.2	1,659,508
Insulating Pipe Tape*	111.5	26.4%	29.5	973,684
Total	595.2	47.0%	279.6	9,239,316

*Reported savings for pipe tape based on an assumed installation of five feet of tape.

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Measure-level and kit-level demand savings are detailed in Table 3-16.

Table 3-16: DEC Measure-Level Reported and Verified Demand Gross Savings

Measure	Reported Demand Savings, per unit (kW)	Realization Rate	Verified Gross Demand Savings, per unit (kW)	Total Verified Gross Demand Savings (kW)
Low-flow Showerhead (1.5 GPM)	0.13	48.1%	0.063	2,069.6
Low-flow Bathroom Aerator (1.0 GPM)	0.00	69.3%	0.002	79.9
Low-flow Kitchen Aerator (1.0 GPM)	0.10	36.1%	0.027	886.6
Insulating Pipe Tape*	0.01	27.8%	0.003	111.2
Total	0.25	38.8%	0.095	3,147.3

*Reported savings for pipe tape based on an assumed installation of five feet of tape.

The impact evaluation for the 2016 program resulted in a program energy realization rate of 47.0% and a demand realization rate of 38.8% as presented in Table 3-17.

Table 3-17: 2016 DEC Energy and Demand Savings per Kit

Measurement	Reported	Realization Rate	Gross Verified
Energy (kWh)	595.2	47.0%	279.6
Demand (kW)	0.25	38.8%	0.095

Table 3-18 presents the reported and verified energy and demand savings for the 2016 program year.

Table 3-18: 2016 DEC Program Level Energy and Demand Savings

Measurement	Reported	Realization Rate	Gross Verified
Energy (kWh)	19,669,692	47.0%	9,239,316
Demand (kW)	8,101.2	38.8%	3,147.3

4 Net-to-Gross Methodology and Results

The evaluation team used participant survey data to calculate a net-to-gross (NTG) ratio for SEWKP. NTG reflects the effects of free ridership (FR) and spillover (SO) on gross savings. Free ridership refers to the portion of energy savings that participants would have achieved in the absence of the program through their own initiatives and expenditures (U.S. DOE, 2014).³ Spillover refers to the program-induced adoption of additional energy-saving measures by participants who did not receive financial incentives or technical assistance for the additional measures installed (U.S. DOE, 2014). The evaluation team used the following formula to calculate the NTG ratio:

$$NTG = 1 - FR + SO$$

4.1 Free Ridership

Free ridership estimates how much the program influenced participants to install the energy-saving items included in the energy efficiency kit. Free ridership ranges from 0 to 1, 0 being no free ridership and 1 being total free ridership, with values in between representing varying degrees of partial free ridership.

The evaluation team used participant survey data to estimate free ridership. The survey used several questions to identify items that a given participant installed and did not later uninstall: respondents were only asked free ridership questions about items that remained installed by the date of the survey.

The evaluation team's methodology for calculating free ridership consists of two components, free ridership change (FRC) and free ridership influence (FRI), both of which range from 0 to .5 in value.

$$FR = FRC + FRI$$

4.1.1 Free Ridership Change

FRC reflects what participants reported they would have done if the program had not provided the items in the kit. For each respondent, the survey assessed FRC for each measure that the respondent installed and did not later uninstall.

Specifically, the survey asked respondents which, if any, of the currently installed items they would have purchased and installed on their own within the next year if Duke Energy had not provided them. For respondents who installed more than one of a given measure (bathroom

³ The U.S. Department of Energy (DOE) (2014). *The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures. Chapter 23: Estimating Net Savings: Common Practices*. Retrieved August 29, 2016 from http://energy.gov/sites/prod/files/2015/02/f19/UMChapter23-estimating-net-savings_0.pdf.

aerators or showerheads) that indicated they would have installed either of the multi-count measures on their own, we asked them a follow up question that determined how many of the number installed through the program that they would have installed on their own.

For each measure, the evaluation team assigned one of the FRC values shown in the Table 4-1, based on the respondents' responses. FRC values range from 0.0 to 0.5.

Table 4-1: Free Ridership Change Values

What Respondent Would Have Done Absent the Program*	FRC Value
Would not have purchased and installed the item within the next year	0.00
Would have purchased and installed the item within the next year	$\frac{\text{Count respondent said would install on their own}}{\text{Count respondent installed through program}}$
Don't know	0.25

*Survey response to: If you had not received the free efficiency items in the kit, would you have purchased and installed any of these same items within the next year?

4.1.2 Free Ridership Influence

FRI assesses how much influence the program had on a participant's decision to install (and keep installed) the items in the kit. The survey asked respondents to rate how much influence five program-related factors had on their respective decisions to install the measures, using a scale from 0 ("not at all influential") to 10 ("extremely influential"). The program-related factors included:⁴

- The fact that the items were free
- The fact that the items were mailed to their home
- Information provided by Duke Energy about how the items would save energy and water
- Other information or advertisements from Duke Energy, including its website

Asking respondents to separately rate the influence of each of the four above items had on the decision to install each measure would have been overly burdensome. Therefore, while the survey assessed FRC for each measure type, it assessed collective FRI for all measures.

FRI is based on the highest-rated item in the FRI battery. The evaluation team assigned the following FRI scores, based on that rating (Table 4-2).

⁴ To reduce response fatigue, we only asked respondents to rate program influence on their decision to install the measures (as a whole). Thus, we did not collect separate influence data for each measure included in the kit.

Table 4-2: Free Ridership Influence Values

Highest Influence Rating	FRI Value
0	0.50
1	0.45
2	0.40
3	0.35
4	0.30
5	0.25
6	0.20
7	0.15
8	0.10
9	0.05
10	0.00

4.1.3 End-Use-Specific Total Free Ridership

The evaluation team calculated total free ridership by measure, by:

- First, calculating measure-specific FR scores for each respondent by summing each respondent's measure-specific FRC score with their FRI score.
- Second, calculating a weighted mean FR score for each measure from the individual measure-specific FR scores; we weighted measure-specific FR scores by the number of units installed by each respondent.

Table 4-3 presents the measure-use FR estimates.

Table 4-3: Measure-Specific Free Ridership Scores

End-use	Measure-Specific Free Ridership	
	DEP	DEC
Showerhead	0.16	0.19
Kitchen Faucet Aerator	0.13	0.13
Bathroom Faucet Aerator	0.15	0.10
Insulating Pipe Tape	0.10	0.11

4.1.4 Program-Level Free Ridership

The evaluation team estimated program-level free ridership by calculating a savings-weighted mean of the measure-specific FR scores presented in Table 4-3. Overall free ridership for the DEP kits is 15%. Overall free ridership for the DEC kits is 17%.

4.2 Spillover

Spillover estimates energy savings from additional energy improvements made by participants who are influenced by the program to do so and is used to adjust gross savings. The evaluation team used participant survey data to estimate spillover. The survey asked respondents to

indicate what energy-saving measures they had implemented since participating in the program. The evaluation team then asked participants to rate the influence the program had on their decision to purchase these additional energy-saving measures on a scale of 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential.”

The evaluation team converted the ratings to a percentage representing the program-attributable percentage of the measure savings, from 0% to 100%. The team then applied the program-attributable percentage to the savings associated with each reported spillover measure to calculate the participant measure spillover (PMSO) for that measure. We defined the per unit energy savings for the reported spillover measures based on ENERGY STAR® calculators as well as based on algorithms and parameter assumptions listed in the 2016 Pennsylvania and Mid-Atlantic TRMs.

Lighting measures (namely, LEDs and CFLs) were commonly reported spillover measures. Since Duke Energy offered discounted lighting at participating retailers through their Energy Efficient Lighting (EEL) program as well through their online lighting store, we asked respondents to confirm they did not use Duke Energy’s website to find or purchase discounted lighting. As to not double-count these savings, respondents who indicated they used Duke Energy’s website to find or purchase discounted lighting did not count towards spillover estimates.

Participant measure spillover is calculated as follows:

$$PMSO = \text{Deemed Measure Savings} * \text{Program Attributable Percentage}$$

The evaluation team summed all PMSO values for each jurisdiction (Table 4-4 and Table 4-5).

Table 4-4: DEP PMSO, by Measure by Category

Measure Category	Total kWh for Category	Percent Share of kWh
LEDs	1,915.3	44%
CFLs	1,625.0	37%
Appliances	531.9	12%
Insulation	106.0	2%
HVAC	67.4	2%
Other	120.6	3%
Total	4,366.2	100%

Table 4-5: DEC PMSO, by Measure by Category

Measure Category	Total kWh for Category	Percent Share of kWh
LEDs	1,679.2	54%

Measure Category	Total kWh for Category	Percent Share of kWh
Appliances	883.9	28%
CFLs	290.9	9%
Windows	193.8	6%
HVAC	62.9	2%
Insulation	21.7	1%
Total	3,132.4	100%

The evaluation team then calculated each jurisdictional sample's gross program savings by summing the products of each measure's average per household savings and the total jurisdictional sample size (Table 4-6 and Table 4-7).

Table 4-6: DEP Sample's Gross Program Savings (n=131)

Measure	Average per Household Savings (kWh)	Verified Sample Savings (kWh)
Showerhead	291.6	38,204.8
Kitchen Faucet Aerator	60.3	7,899.3
Bathroom Faucet Aerator	5.4	707.4
Insulating Pipe Tape	38.8	5,088.6
Total	396.1	51,900.1

Table 4-7: DEC Sample's Gross Program Savings (n=114)

Measure	Average per Household Savings (kWh)	Verified Sample Savings (kWh)
Showerhead	195.4	22,272.1
Kitchen Faucet Aerator	50.2	5,724.6
Bathroom Faucet Aerator	4.5	516.1
Insulating Pipe Tape	29.5	3,358.8
Total	279.6	31,871.5

The evaluation team then divided the summed jurisdictional PMSO values by the sample's gross program savings to calculate an estimated spillover percentage for the program:

$$\text{Program SO} = \frac{\sum \text{PMSO}}{\sum \text{Sample's Gross Program Savings}}$$

$$DEP\ SO = \frac{4,366.2}{51,900.1}$$

$$DEC\ SO = \frac{3,132.4}{31,871.5}$$

These calculations produced a spillover estimate of 8% for the DEP program and 10% for the DEC program.

4.3 Net-to-Gross

Inserting the FR and SO estimates into the NTG formula ($NTG = 1 - FR + SO$) produces an NTG value of 0.93 for both DEP and DEC programs (Table 4-8). The evaluation team applied the NTG ratio of 0.93 to program-wide verified gross savings to calculate SEWKP kit net savings for each jurisdiction.

Table 4-8: Net-to-Gross Results

Jurisdiction	Free Ridership	Spillover	NTG
DEP	0.15	0.08	0.934
DEC	0.17	0.10	0.932

5 Process Evaluation

5.1 Summary of Data Collection Activities

The process evaluation is based on interviews and surveys with program staff, implementer staff, and households who received a kit during the program evaluation year (Table 5-1).

Table 5-1: Summary of Process Evaluation Data Collection Activities

Target Group	Method	Sample Size	Population	Confidence / Precision
Duke Energy program staff	Phone in-depth interview	1	N/A	N/A
Implementation staff: EFI	Phone in-depth interview	1	N/A	N/A
DEP participants	Mixed mode (web/phone) survey	131	28,799	90/7.2
DEC participants	Mixed mode (web/phone) survey	114	35,077	90/7.7

5.2 DEP Process Evaluation Findings

Motivations for Requesting Kit

The majority of DEP participants requested the Save Energy and Water Kit to conserve water (70%) and/or electricity (60%) (Table 5-2). More than half (53%) said they requested the kit because “it was free.”

Table 5-2: DEP Participant Motivations for Requesting Kit (Multiple Responses Allowed; n=131)

Motivation	Percent Reporting
Wanted to conserve water	70%
Wanted to conserve electricity	60%
It was free	53%
It was offered by Duke Energy	34%
It was easy	33%
To save money	4%
Other	4%

Installation Rates

The majority (85%) of kit recipients installed at least one measure, installing an average of two measures from the kit. Most kit recipients initially installed at least one of the showerheads (69%) or the bathroom faucet aerators (56%), with a smaller proportion reporting installing the other measures. Of the respondents who received a medium-sized kit, 49% installed both

showerheads.⁵ Regardless of kit size received, participants installed one bathroom aerator and one showerhead on average.

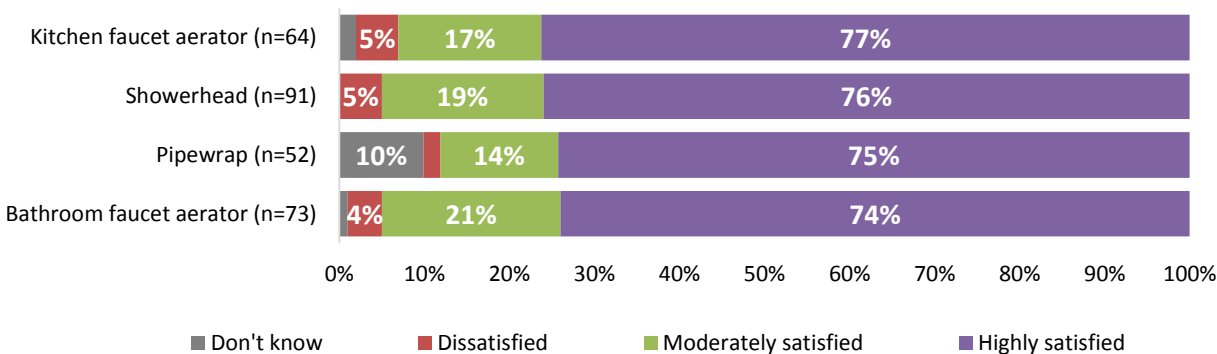
Of the respondents who installed at least one item from the kit, 15% said they later uninstalled at least one of the measures, five of whom uninstalled everything they had installed. In total, 5% of all installed measure types were later uninstalled. Showerheads and bathroom faucet aerators had the highest uninstallation rates, with about one-tenth of respondents who installed them later uninstalling them. Respondents said they uninstalled these water saving measures because they did not like how they worked, later elaborating that the water pressure provided was insufficient to their preferences.

About one-fifth (18%) of respondents reported installing all measure types. Of the respondents who did not install all measure types, 30% said they plan to install at least one of the items they had not yet installed. Respondents who indicated they don't plan to install one or more of the measures typically said they would not install the remaining items because they already had the item, they had not "gotten around to it", or the item did not fit on their fixture.

Measure Satisfaction

Nearly all kit recipients reported moderate to high satisfaction with the items they installed from their kit (Figure 5-1). To best gauge the experience with the measures, we asked respondents to rate their satisfaction with all measures they installed, including those they later uninstalled. Respondents reported similar levels of satisfaction with all four measures. Open-ended comments revealed dissatisfied respondents were displeased with the water-saving measures due to water pressure being too low.

Figure 5-1: DEP Participant Satisfaction with Installed Measures*



* Respondents rated their satisfaction with the measures on a 0 ("very dissatisfied") to 10 ("very satisfied") scale. Dissatisfied indicates 0-4 ratings, moderately satisfied indicates 5-7 ratings, and highly satisfied indicates 8-10 ratings.

Instructional Materials in the Kit

In addition to energy-saving measures, the Save Energy and Water Kit includes a detailed instructional insert booklet that provides information on how to install the provided measures.

⁵ 70% of medium kit recipients installed at least one showerhead, 49% of which installed both that came with the kit.

SECTION 5

The majority (84%) of respondents said they read the booklet, most of whom (80%) reported they found it highly helpful.⁶ Additionally, Duke Energy Progress provides how-to videos on its website that demonstrate how to install the kit items. Only 7% of kit recipients watched these online videos, though most of those who watched them (67%) considered the videos highly helpful⁷.

Additional Energy Saving Actions

Over one-quarter (39 of 131, or 30%) of participants reported purchasing and installing at least one additional energy efficiency measure since receiving their kit (Table 5-3). LEDs (18 mentions) and energy efficient appliances (13 mentions) were the most common purchases reported. Seven respondents reported getting a DEP incentive for their measure, and most (25 of 39) respondents said the DEP SEWKP at least partially influenced their decision to purchase and install additional energy-saving measures.

Table 5-2: Additional Energy Saving Measures Purchased by DEP Participants (Multiple Responses Allowed; n=131)

	Count of Respondents Reporting Purchases After Receiving the Kit	Count That Received Duke Incentives for the Purchase/Measure*	Count Reporting at Least Some DEP Program Influence on Purchase
At least one measure	39	7	25
LEDs	18	4	11
Efficient appliances	13	0	9
Air sealing	11	0	9
CFLs	9	1	8
Insulation	9	0	7
Efficient heating or cooling equipment	8	2	4
Energy efficient water heater	6	0	4
Efficient windows	2	0	0
Duct sealing or insulation	2	0	2
Other	7	0	5

* Includes respondents that indicated they got their LEDs and CFLs through the DEP buy-down program.

⁶ We asked respondents to rate the helpfulness of the instruction booklet on a scale from 0 ("not at all helpful") to 10 ("very helpful"). 88 of the 110 (or 80%) respondents who reported reading the booklet gave a rating of 8 or higher.

⁷ We asked respondents to rate the helpfulness of the DEP online how-to videos on a scale from 0 "not at all helpful" to 10 ("very helpful"). Six of the nine (67%) respondents who reported watching the videos gave a rating of 8 or higher.

5.3 DEC Process Evaluation Findings

Motivations for Requesting Kit

More than half of DEC participants requested the Save Energy and Water Kit to conserve water (56%) and/or electricity (55%) (Table 5-3). Less than half (41%) requested the kit because “it was free”.

Table 5-3: DEC Participant Motivations for Requesting Kit (Multiple Responses Allowed; n=114)

Motivation	Percent Reporting
Wanted to conserve water	56%
Wanted to conserve electricity	55%
It was free	41%
It was offered by Duke Energy	36%
It was easy	17%
To save money	5%
Other	8%

Installation Rates

Most (76%) kit recipients installed at least one measure, installing an average of two measures from the kit. The majority of kit recipients initially installed at least one of the showerheads (62%), less than half (46%) initially installed at least one of the bathroom faucet aerators, with a smaller proportion reporting installing the other measures. Of the respondents who received a medium-sized kit, 53% installed both showerheads.⁸ Regardless of kit size received, participants installed one bathroom aerator and one showerhead on average.

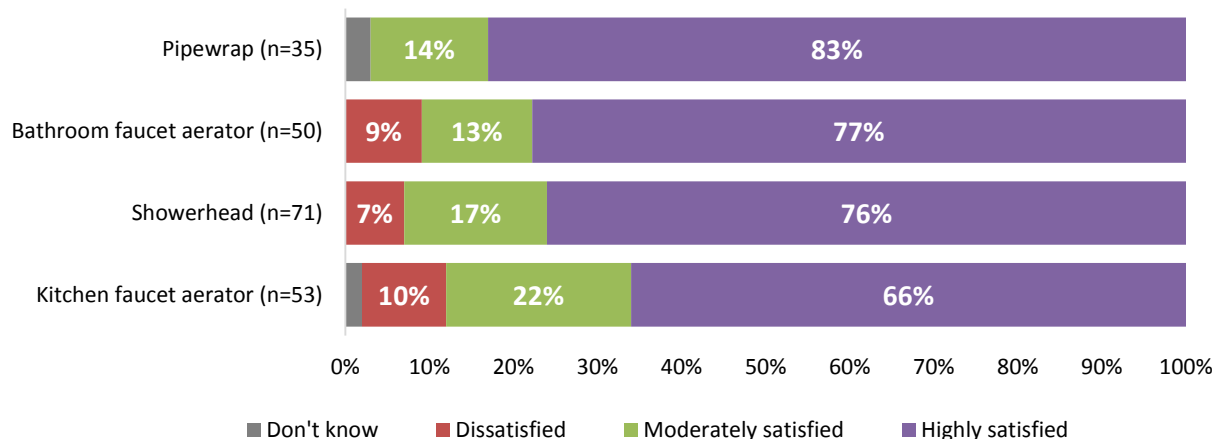
Of the respondents who installed at least one item from the kit, 12% said they later uninstalled at least one of the measures, but only three participants uninstalled everything they had installed. In total, 3% of all installed measure types were later uninstalled. Kitchen faucet aerators and showerheads had the highest uninstallation rates, with about one-tenth of respondents who initially installed them uninstalling them later. Respondents said they uninstalled these water saving measures because they did not like how they worked, later elaborating that the water pressure provided was insufficient to their preferences.

Eleven percent of respondents reported installing all measure types. Of the respondents who did not install all measure types, 43% said they plan to install at least one of the items they had not yet installed. Respondents who indicated they don't plan to install one or more of the measures typically said they would not install the remaining items because they already had the item, they had not “gotten around to it”, or the item did not fit on their fixture.

⁸ 59% of medium kit recipients installed at least one showerhead, 53% of which installed both that came with the kit.

Measure Satisfaction

Nearly all kit recipients reported moderate to high satisfaction with the items they installed from their kit (Figure 5-2). To best gauge the experience with the measures, we asked respondents to rate their satisfaction with all measures they installed, including those they later uninstalled. Respondents were most satisfied with the pipe tape and were least satisfied with the kitchen faucet aerator. Open-ended comments revealed respondents were dissatisfied with the water-saving measures due to water pressure being too low.

Figure 5-2: DEC Participant Satisfaction with Installed Measures*

* Respondents rated their satisfaction with the measures on a 0 ("very dissatisfied") to 10 ("very satisfied") scale. Dissatisfied indicates 0-4 ratings, moderately satisfied indicates 5-7 ratings, and highly satisfied indicates 8-10 ratings.

Instructional Materials in the Kit

In addition to energy-saving measures, the Save Energy and Water Kit includes a detailed instructional insert that provides information on how to install the provided measures. The majority (82%) of respondents said they read the insert, most of whom (70%) reported they found it highly helpful.⁹ Additionally, Duke Energy provides how-to videos on its website that demonstrate how to install the kit items. Only 5% of kit recipients watched these online videos, though 83% of them considered the videos highly helpful.¹⁰

Additional Energy Saving Actions

One-third (37 of 114, or 33%) of participants reported purchasing and installing additional energy efficiency measures since receiving their kit (Table 5-4). Participants most commonly reported installing LEDs (14 respondents) or sealing air leaks in windows, walls, or doors (11 respondents). Eleven respondents reported getting a Duke Energy incentive for their measure, and most (29 of 37) respondents said DEC SEWKP at least partially influenced their decision to purchase and install additional energy-saving measures.

⁹ We asked respondents to rate the helpfulness of the instruction booklet on a scale from 0 ("not at all helpful") to 10 ("very helpful"). Sixty-five of the 93 (or 70%) respondents who reported reading the booklet gave a rating of 8 or higher.

¹⁰ We asked respondents to rate the helpfulness of the DEC online how-to videos on a scale from 0 ("not at all helpful") to 10 ("very helpful"). Five of the six (83%) respondents who reported watching the videos gave a rating of 8 or higher.

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Table 5-4: Additional Energy Saving Measures Purchased by DEC Participants (Multiple Responses Allowed; n=114)

	Count of Respondents Reporting Purchases After Receiving the Kit	Count That Received Duke Incentives for the Purchase/Measure*	Count Reporting at Least Some DEC Program Influence on Purchase
At least one measure	37	11	29
LEDs	14	5	12
Air sealing	11	0	10
CFLs	7	4	6
Efficient appliances	7	0	7
Efficient heating or cooling equipment	7	1	4
Efficient water heater	7	0	5
Insulation	6	0	6
Efficient windows	3	0	3
Duct sealing	2	0	1
Moved into ENERGY STAR home	1	0	1
Other	3	1	2

* Includes respondents that indicated they got their LEDs and CFLs through the Duke Energy buy-down program.

6 Conclusions and Recommendations

The evaluation findings, led to the following conclusions and recommendations for the program.

Conclusion 1: The program model is highly successful: it leverages low-cost measures to foster energy savings that would not have happened otherwise. Duke Energy's easy process for requesting and receiving a kit with free energy and water saving items motivated thousands of customers to request and install energy saving measures in their home. Most participants installed at least one measure from the kit and the vast majority of measures, once installed, stayed installed. Participants were highly influenced by the program to install these kit measures, as demonstrated by low free ridership rates. Further, about one-third of respondents in either jurisdiction reported spillover actions.

Recommendation: Continue using SEWKP to encourage Duke Energy customers to save energy and water.

Conclusion 2: The water saving measures' low flow water pressure results in some minor satisfaction and uninstallation issues. Complaints of excessively low water pressure were the primary drivers of item dissatisfaction and uninstallation. However, only a minority of participants were dissatisfied with or uninstalled water saving items.

Recommendation: Consider expanding participant-facing messaging around low-flow measures; water measure ISRs and satisfaction may increase if participants have better upfront expectations on the flow rates of the measures and better understand the energy saving benefits of low-flow fixtures.

Recommendation: Consider investigating alternative products that provide the same GPM as the current aerator and showerhead offerings, but offer higher perceived water pressure.

Conclusion 3: Despite delivering a useable number of units to most homes, there may be cost- effectiveness benefits to reducing the number of items delivered. The kit size assignment algorithm works fairly well:

- Small and medium kit recipients largely got the appropriate number of kitchen and bathroom aerators, given the number of faucets in their home.
- However, more than half of small kit recipients have two or more showers in their home.

Nonetheless, many items do not get installed, especially multi-count measures:

- Recipients of either kit size installed one bathroom aerator and one showerhead on average.

- Medium kits had lower ISRs on every measure, suggesting that delivering too many items may overwhelm participants and consequently hinder installations.

Recommendation: Consider if there is a significant enough cost-effectiveness benefit to justify reducing the number of kit sizes and multi-count units offered. Reducing the number of items included in the kit, particularly the number of bathroom aerators provided, could increase ISRs and reduce program costs as the survey data reveals there is a negative relationship with number of kit items delivered and ISRs (that is, the more items Duke Energy provides, the lower the ISRs).

Conclusion 4: A high amount of non-electric water heater customers participated in the program. In total, the evaluation found that 18% of DEP and 29% of DEC customers in the program had non-electric water heaters. These saturations are comparable to the 2013 Duke Residential Appliance Saturation Survey non-electric water heat saturation of 25%.

Recommendation: For future program recruitment, Duke Energy should continue to review and refine its customer screening techniques to better filter non-electric water heater customers from the program's solicitation.

Appendix A Summary Form

Save Energy and Water Kit Program Completed EMV Fact Sheet

Description of program

The Duke Energy Save Energy and Water Kit Program (SEWKP) is an energy efficiency program that offers energy-efficient water fixtures and water pipe insulation to residential customers. The program is designed to reach customers who have not adopted energy-efficient water devices. The kits are provided to residents through a Direct Mail Campaign, allowing eligible customers to request to have the items shipped directly to their homes, free of charge.

Date	January 1, 2017 – September 30, 2017
Region(s)	North Carolina, South Carolina
Evaluation Period	January 1, 2016 – December 31, 2016
Annual Gross MWh Savings	DEP: 11,153; DEC: 9,239
Per Kit kWh Savings	DEP: 396.1; DEC: 279.6
Annual Gross MW Savings	DEP: 3.7; DEC: 3.2
Net-to-Gross Ratio	DEP: 0.93; DEC: 0.93
Process Evaluation	Yes
Previous Evaluation(s)	DEC SEWKP; April 12, 2016, The Cadmus Group

Evaluation Methodology

Impact Evaluation Activities

- Telephone/web surveys (DEP n=131, DEC n=114) and analysis of 4 unique measures.

Impact Evaluation Findings

- Realization rate: DEP = 91.7%; DEC = 47.0%
- Net-to-gross ratio: DEP = 0.934; DEC = 0.932

Process Evaluation Activities

- Telephone/web surveys with SEWKP participants (DEP n=131, DEC n=114) and analysis of 4 unique measures.
- 1 interview with program staff
- 1 interview with implementation staff

Process Evaluation Findings

- The SEWKP influences participants to install kit measures and adopt new behaviors.
- Participants are generally satisfied with kit items and report high satisfaction with overall program.
- Kit size assignment algorithm is fairly accurate.
- Low water pressure is a significant contributor to dissatisfaction among participants for water-saving kit items.
- Online how-to videos are viewed by a low proportion of SEWKP participants
- Pipe wrap is least popular measure; less than half of SEWKP participants installed pipe wrap.

Appendix B Measure Impact Results

Table B-1: DEP Program Year 2016 per Unit Verified Impacts by Measure – Key Measure Parameters

Measure Category	Gross Energy Savings (kWh)	Gross Demand (kW)	Realization Rate (Energy)	Free Ridership	Spillover	Net to Gross Ratio	M&V Factor (Energy) (RR x NTG)	Measure Life
1.5 GPM Showerhead	291.6	0.093	203.9%	0.15	0.08	93.4%	190.5%	9
1.0 GPM Bathroom Faucet Aerator	5.4	0.003	7.4%				6.9%	10
1.5 GPM Kitchen Faucet Aerator	60.3	0.032	98.8%				92.3%	10
Insulating Pipe Tape	38.8	0.004	25.1%				23.4%	13
Total	396.1	0.133	91.7%	0.15	0.08	93.4%	85.7%	-

Table B-2: DEC Program Year 2016 per Unit Verified Impacts by Measure – Key Measure Parameters

Measure Category	Gross Energy Savings (kWh)	Gross Demand (kW)	Realization Rate (Energy)	Free Ridership	Spillover	Net to Gross Ratio	M&V Factor (Energy) (RR x NTG)	Measure Life
1.5 GPM Showerhead	195.4	0.063	66.5%	0.17	0.10	93.2%	61.9%	9
1.0 GPM Bathroom Faucet Aerator	4.5	0.002	70.2%				65.4%	10
1.5 GPM Kitchen Faucet Aerator	50.2	0.027	27.4%				25.5%	10
Insulating Pipe Tape	29.5	0.003	26.4%				24.6%	13
Total	279.6	0.095	47.0%	0.17	0.10	93.2%	43.8%	-

Appendix C Program Performance Metrics

This appendix provides key program performance metrics, or PPIs. See Chapter 5 for the underlying results and more detailed findings.

Figure C-1: DEP Program Experience PPIs

	Participants	
	%	n
Motivation PPIs		
<i>Top motivating factors to request and install items from kit</i>		
To conserve water	70%	131
To conserve electricity	60%	131
Because it was free	53%	131
Program experience & satisfaction PPIs		
Overall satisfaction with program	85%	111
Usefulness of kit instructions	80%	110
Usefulness of online how-to videos	67%	9
<i>Satisfaction with kit measures</i>		
Showerhead	76%	91
Kitchen faucet aerator	77%	64
Bathroom faucet aerator	74%	73
Pipe wrap	75%	52
Program influence on behavior PPIs		
Installed at least one kit measure	85%	131
Plan to install measure[s] (of those that did not install any measures)	60%	20
Most common measure installed: <i>showerhead</i>	69%	131
Adopted new energy and water saving behaviors	60%	131
Respondents reporting program attributable spillover	15%	131
Challenges and opportunities for improvement PPIs		
Measure with lowest installation rate: <i>bathroom aerator</i>	30%	131
Measure with highest uninstallation rate: <i>kitchen aerator</i>	9%	64
Measure with highest dissatisfaction: <i>showerhead</i>	6%	91

Figure C-2: DEP Participant Demographics PPIs





	Ownership Status			Household Size	
	Own	97%		One to two	62%
	Rent	2%		Three	15%
				Four	14%
				Five+	8%
	Education			Income	
	High school or less	14%		< \$30k	11%
	Some college	21%		\$30k to < \$60k	24%
	Bachelors Degree	37%		\$60k to < \$75k	7%
	Graduate Degree	23%		\$75k to < \$100k	12%
	Refused / Don't know	5%		\$100k+	20%
				Refused / Don't know	27%

Figure 6-1: DEP Participant Household Characteristics PPIs







	Housing Type		
	Detached	87%	
	Attached	7%	
	Mobile	5%	
	Water Heater Fuel Type		
	Electric	79%	
	Natural Gas	16%	
	Other	2%	
	Home Square Feet		
		Small Kit	Medium Kit
	Less than 1,000	14%	0%
	1,000-1,499	55%	24%
	1,500-1,999	17%	32%
	2,000-2,999	10%	31%
	3,000+	3%	14%
	Number of Showers		
		Small Kit	Medium Kit
	1	30%	6%
	2	57%	69%
	3	13%	16%
	4+	0%	9%
	Number of Kitchen Faucets		
		Small Kit	Medium Kit
	1	87%	88%
	2	13%	12%
	3	0%	0%
	Number of Bathroom Faucets		
		Small Kit	Medium Kit
	1-2	67%	28%
	3-4	30%	53%
	5+	3%	19%

Figure C-3: DEC Program Experience PPIs

	Participants	
	%	n
Motivation PPIs		
<i>Top motivating factors to request and install items from kit</i>		
To conserve water	56%	114
To conserve electricity	55%	114
Because it was free	41%	114
Program experience & satisfaction PPIs		
Overall satisfaction with program	85%	87
Usefulness of kit instructions	70%	93
Usefulness of online how-to videos	83%	6
<i>Satisfaction with kit measures</i>		
Showerhead	76%	71
Kitchen faucet aerator	66%	50
Bathroom faucet aerator	77%	53
Pipe wrap	83%	35
Program influence on behavior PPIs		
Installed at least one kit measure	76%	114
Plan to install measure[s] (of those that did not install any measures)	59%	27
Most common measure installed: <i>showerhead</i>	62%	114
Adopted new energy and water saving behaviors	67%	114
Respondents reporting program attributable spillover	13%	114
Challenges and opportunities for improvement PPIs		
Measure with lowest installation rate: <i>bathroom aerator</i>	25%	114
Measure with highest uninstallation rate: <i>kitchen faucet aerator</i>	10%	50
Measure with highest dissatisfaction: <i>kitchen faucet aerator</i>	10%	50

Figure 6-2: DEC Participant Demographics PPIs











	Ownership Status			Household Size	
	Own	94%		One to two	60%
	Rent	6%		Three	18%
				Four	8%
				Five +	5%
	Education			Income	
	High school or less	20%		<\$30k	20%
	Some college	32%		\$30k to <\$60k	26%
	Bachelor's degree	19%		\$60k to <\$75k	5%
	Graduate degree	16%		\$75k to <\$100k	9%
	Refused	13%		\$100k+	11%
				Refused	28%

Figure 6-3: DEC Participant Household Characteristics PPIs

	Housing Type		
	Detached	81%	
	Attached	4%	
	Mobile	13%	
	Water Heater Fuel Type		
	Electric	70%	
	Natural Gas	28%	
	Home Square Feet		
		Small Kit	Medium Kit
	Less than 1,000	23%	4%
	1,000-1,499	52%	25%
	1,500-1,999	16%	28%
	2,000-2,999	10%	33%
	3,000+	0%	10%
	Number of Showers		
		Small Kit	Medium Kit
	1	46%	11%
	2	54%	72%
	3	0%	15%
	4+	0%	1%
	Number of Kitchen Faucets		
		Small Kit	Medium Kit
	1	97%	89%
	2	3%	10%
	3	0%	1%
	Number of Bathroom Faucets		
		Small Kit	Medium Kit
	1-2	80%	41%
	3-4	20%	49%
	5+	0%	10%

Appendix D Instruments

D.1 Program Staff In-Depth Interview Guide

Introduction

Today, we'll be discussing your role in the SEWKP or water kit program. We would like to learn about your experiences in administering this program.

Your comments are confidential. If I ask you about areas you don't know about, please feel free to tell me that and we will move on. Also, if you want to refer me to specific documents to answer any of my questions, that's great – I'm happy to look things up if I know where to get the information.

I would like to record this interview for my note-taking purposes. Do I have your permission?

Roles & Responsibilities

Q1. Please describe your position at Duke Energy and your role in the water kit program.

Q2. How long have you been in this role?

Program Delivery

Next, I'd like to learn more about how this program was delivered since your involvement. If the program implementation is different in 2017, please let me know.

Q3. How is Duke Energy targeting households to participate in this program? Does this vary by jurisdiction?

[IF NEEDED:]

1. What marketing and outreach activities did Duke Energy conduct in the 2016 program year? *[Interviewer: we know they market the program through direct-mail campaign. Probe to inquire if they market the program in any other way.]*
 2. In 2016, what proportion requested a kit among those targeted by the direct mail campaign? Are you satisfied with this response rate? If not, why not?
 3. In terms of marketing, what is planned for 2017? *[If not mentioned: Do you all plan to have a customer facing website for the program? If yes, when and what would it entail? If not, why not?]*
- Q4. What feedback, if any, did you receive from kit recipients on why they decided to request a kit?

Q5. Please describe the kit distribution process, including the responsibilities of your vendors: Relationship 1 (R1) and EFI.

[IF NEEDED:]

1. Can the kit form be submitted online? If not, is Duke considering this option?
2. Who checks whether customers who submitted the kit form are eligible for the program? What is the eligibility criteria?
3. How do you identify customers who have an electric water heating? *[Interviewer: Prior evaluation states that customers with electric water heating are eligible for this program.]*
4. Who tracks kit processing and distribution?
5. How are kits customized? [IF NEEDED:] Can you describe what is included in the small, medium, and large kit? (Confirm kit contents as seen below)

Kit 1 (small)	bath aerator	2
	kitchen aerator	1
	shower head	1
	pipe tape	5
Kit 2 (medium)	bath aerator	4
	kitchen aerator	1
	shower head	2
	pipe tape	5
Kit 3 (large)	bath aerator	5
	kitchen aerator	1
	shower head	3
	pipe tape	5

6. *[If not mentioned]* Are large kits still offered to customers? (If so, does this vary by jurisdiction?)
7. Prior to January 2016, documentation shows the kitchen aerator to have 1.0 GPM, but according to a Duke staff person, the aerator is now rated at 1.5 GPM. Can you please confirm the current GPM for kitchen aerators, and when that changed over (if at all)?
8. What energy saving educational materials are included in the kit?

Q6. What type of feedback have you received from kit recipients about the measures in the kit? [IF ANY ISSUES REPORTED:] How have you addressed those issues?

Program Goals

Q7. In 2016 and 2017 program year, what were/are Duke Energy targets in terms of:

1. Number of water kits distributed in Carolinas, Progress, Ohio, Indiana, and Kentucky
2. Number of kits distributed by customer segments – if applicable

3. Cost of distributing the kits [*Probe: Does this vary by jurisdiction?*]
4. Anything else?

Q8. How were those targets set, and by whom?

Q9. Compared to the previous program years, have these targets been the same or have they changed? [*If changed:*] Why have they changed?

Q10. Were/are you on track to meet 2016/2017 targets? [*If not on track, probe why not on track and how far behind are they in meeting their targets.*]

1. Number of water kits distributed in each jurisdiction
2. Number of kits distributed by customer segments – if applicable
3. Cost of distributing the kits
4. Anything else?

Q11. How about savings targets? Are you on track to meet the savings targets in Carolinas, Progress, Ohio, Indiana, and Kentucky? If not, why not?

Q12. Does the program have any process or non-impact goals? (*Probe: low-income, renter, or non-English speaking population targeting, increased kit recipient knowledge of how to save energy, etc.*)

[*IF YES:*]

1. How are these goals established?
2. How are they measured?

Communication

Q13. Can you describe how your vendors communicate about the program with Duke Energy? Who do you communicate with, how often, and what about? Does this vary by jurisdiction?

Q14. How often do you or vendors have to resolve an issue with kits? What types of issues come up?

Data Tracking of Kits

Let's talk about the kits a little bit.

Q15. Were there any changes to the items in the small, medium, or large kit during 2016 and 2017 program year? Any changes for 2018 program year? Are these changes for all jurisdictions?

- Q16. We heard that customers must complete a short survey/form to receive a kit. Would it be possible to receive/see this survey data?
- Q17. From the moment a customer requests a kit, how long does it take to receive a kit? Is this time frame typical in terms of how long it takes to receive a kit? [*IF NOT TYPICAL, PROBE to get more information on this topic.*] Does it vary by jurisdiction?
- Q18. Can you tell us how your vendor reports the number of kits sent out to customers to Duke Energy? Is there information on kit distribution that you need but are not getting? What?

We are almost done. I have a few more questions.

Tape Up

- Q19. What would you say are the greatest strengths of this program?
- Q20. What would you say is the biggest challenge in administering this program?
- Q21. How can this program be improved?
- Q22. Is there anything else about the program that we have not discussed that you feel should be mentioned?
- Q23. What would you like to learn from the program evaluation?

Those are all of my questions. Thank you very much for your time.

D.2 Implementer Staff In-Depth Interview Guide

Introduction

[Note: Research Into Action staff will schedule calls ahead of time through email contact.]

[If needed:] We are conducting an evaluation of Duke Energy Save Energy and Water Kit Program (SEWKP). Because your organization is involved with this program, we would like to get your perspective on how the program works to help guide us in our efforts.

I would like to record this interview for my note-taking purposes. Do I have your permission?

Roles & Responsibilities

- Q1. Can you describe your role in the SEWKP or water kit program?
- Q2. Can you describe your program processes? (From receipt of kit forms to notifying EFI to send kits)
- Q3. We have been told that your organization processes kit submission forms for Duke Energy water kit program. Do you provide any other services to Duke Energy?
 - 1. Do you provide these services in all jurisdictions where this program is offered: Progress, Carolinas, Ohio, Indiana, and Kentucky?

Program Goals

- Q4. In jurisdictions where you are providing services to Duke Energy, do you know what are Duke Energy targets in terms of:
 - 1. Number of water kits distributed
 - 2. Cost of the kits
 - 3. Education goals
 - 4. Anything else?
- Q5. Do you know if Duke Energy is on track to achieve those targets? If so, how do you know?

Data Tracking of Kits and Eligibility

- Q6. Based on what we heard, households must complete a short survey/form to receive a kit. Do you track the information that is on the survey form in a database? If so, what exactly do you track?
 - 1. Do you track the same information for each jurisdiction?

2. How do you report this information to Duke Energy?
 3. *[If not addressed:]* Do you maintain a dashboard that tracks number of kits and possibly other information. If so, can you send us a screen shot of that dashboard so we can see what is tracked on that dashboard?
 4. Could you provide us with one of the forms so we can see what participants are filling out?
- Q7. Can you describe to us who is eligible to receive the kit – that is, eligibility criteria? Do eligibility criteria vary by jurisdiction?
- Q8. Can you tell us what proportion of households who sent in a kit survey form were ineligible to receive a kit in 2016 in each jurisdiction? What are the most common reasons as to why customers are ineligible? Do you think the proportion of ineligible applications will increase in 2017? If so, why?
- Q9. From the moment households request a kit, do you know how long it takes to receive a kit? Is this time frame typical in terms of how long it takes to receive a kit? *[IF NOT TYPICAL, PROBE to get more information on this topic.]*
- Q10. What challenges have you encountered with processing of the kit forms? *[Probe about missing information or other errors.]* *[If challenges:]* What could be done to address these challenges? Any suggestions on how to change the form? Are some of these challenges more prevalent in certain jurisdictions? If so, why?
- Q11. How many forms, on average, do you process per week or annually?
- Q12. *[If not addressed:]* What demographic data do you collect from households that request the kits? Which demographic segments are more likely to request the kits? Does this vary by jurisdiction?

Communication

- Q13. Can you describe how you communicate with Duke Energy about the kit form submissions or anything else? Who do you communicate with, how often, and what about?
- Q14. Have there been any challenges in your interactions with Duke Energy? If so, what were they? How did you address them? Were they resolved? If not, what do you think might resolve them?

Tape Up

I have only a couple of more questions left.

- Q15. What would you say is the biggest challenge in processing kit submission forms and distributing kits? What could be done to improve this process?
- Q16. Is there anything else about the program that we have not discussed that you feel should be mentioned?

Those are all of my questions. Thank you very much for your time.

D.3 Participant Survey

Introduction/ Screening

[READ IF MODE=PHONE]

Q1. Hi, I'm _____, calling on behalf of Duke Energy. We are calling about the Save Energy and Water Kit you got from Duke Energy.

This kit included faucet aerators, one or two showerheads, and pipe tape that can help you save water and energy in your home. Do you recall receiving this kit?

1. Yes
2. No [If no: Can I speak with someone who may know something about this kit?]
98. Don't know [If DK: Can I speak with someone who may know something about this kit?]

[INTERVIEWER INSTRUCTIONS: *If no adults are able to speak about the kit, thank and terminate.*]

Q2. [DISPLAY IF MODE=WEB]

We are conducting surveys about the Save Energy and Water Kit you got from Duke Energy. This kit included faucet aerators, one or two showerheads, and pipe tape that can help you save water and energy in your home.

Do you recall receiving this kit?

1. Yes
2. No [TERMINATE]
98. Don't know [TERMINATE]

Motivation and Collateral

Q3. What motivated you to request a free Save Energy and Water Kit from Duke Energy?

[MULTIPLE RESPONSE]

1. Wanted to conserve electricity
2. Wanted to conserve water
3. It was free
4. It was easy
5. It was offered by Duke Energy
6. Other – please specify: [OPEN-ENDED RESPONSE]
98. Don't know [EXCLUSIVE ANSWER]

Q4. Did you read the included instructions on how to install the items that came in the kit?

- 1. Yes
- 2. No
- 98. Don't remember

[ASK IF Q4 = 1]

Q5. On a scale from 0 to 10, where 0 is not at all helpful and 10 is very helpful, how helpful were the instructions on how to install the items that came in the kit?

- 0. Not at all helpful
- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10. Very helpful
- 98. Don't know

[ASK IF Q5<7]

Q6. What might have made the instructions more helpful?

[RECORD VERBATIM ANSWER]

Q7. Did you watch any of Duke Energy's online how-to videos on how to install the items that came in the kit?

- 1. Yes
- 2. No
- 98. Don't remember

[ASK IF Q7 = 1]

Q8. On a scale from 0 to 10, where 0 is not at all helpful and 10 is very helpful, how helpful were Duke Energy's online how-to videos on how to install the items that came in the kit?

- 0. Not at all helpful
- 1.
- 2.

- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10. Very helpful
- 98. Don't know

[ASK IF Q8<7]

Q9. What might have made the instructional videos more helpful?

[RECORD VERBATIM ANSWER]

Assessing Measure Installation

[DISPLAY IF KIT_SIZE=SMALL]

We'd like to ask you about the energy and water saving items included in your kit. The kit contained a showerhead, faucet aerators for the bathroom and kitchen, and pipe tape.

[DISPLAY IF KIT_SIZE=MEDIUM]

We'd like to ask you about the energy and water saving items included in your kit. The kit contained two showerheads, faucet aerators for the bathroom and kitchen, and pipe tape.

Q10. Have you or anyone else installed any of those items in your home, even if they were taken out later?

[Interviewer: Throughout interview, remind respondent as needed to report whether someone else in the home installed or uninstalled any items.]

[SINGLE RESPONSE]

- 1. Yes
- 2. No [→ Q23]
- 98. Don't know [→ TERMINATE]

[ASK IF Q10 = 1]

Q11. Which of the items did you install, even if they were taken out later?

[MULTIPLE RESPONSE]

[Interviewer: Record each response, then prompt with the list items.]



Item

a.	Showerhead
b.	Kitchen faucet aerator
c.	Bathroom faucet aerator
d.	Pipe tape
e.	I don't remember which items were installed [→ TERMINATE]

[ASK IF Q11A = 1 AND KIT_SIZE=MEDIUM]

Q12. Your kit contained two showerheads. Did you install one or both of the showerheads in the kit, even if one or both were taken out later?

[SINGLE RESPONSE]

1. I installed both
2. I only installed one showerhead
98. Don't know

[ASK IF Q11C = 1]

Q13. How many of the bathroom faucet aerators from the kit did you install in your home, even if one or more were taken out later?

[SINGLE RESPONSE]

1. One
2. Two
3. Three [DISPLAY IF KIT_SIZE=MEDIUM]
4. Four [DISPLAY IF KIT_SIZE=MEDIUM]
98. Don't know

[ASK IF Q11D = 1]

Q14. Did you install all of the pipe insulation that was included with the kit?

[SINGLE RESPONSE]

1. Yes
2. No
98. Don't know

[ASK IF Q14 IS DISPLAYED]

Q15. About how many feet of the pipe extruding from your water heater did you tape with the insulation **that came in the kit**? Please go over to your water heater if you need to

check.

[SINGLE RESPONSE]

1. About three feet or less
2. About five feet
3. About ten feet
4. About fifteen feet or more
98. Don't know

[ASK IF ANY PART OF Q11 = 1]

Q16. Overall, how satisfied are you with the item[s] you installed?

[DISPLAY IF MODE=PHONE] Please use a 0 to 10 scale, where 0 is very dissatisfied and 10 is very satisfied. How satisfied are you with...

DISPLAY IF	Item	Rating
Q11a = 1	a. Showerhead	0-10 with DK
Q11b = 1	b. Kitchen faucet aerator	0-10 with DK
Q11c = 1	c. Bathroom faucet aerator	0-10 with DK
Q11d = 1	d. Pipe tape	0-10 with DK

[ASK IF ANY ITEMS IN Q16<7]

Q16a. Can you please explain any dissatisfaction you had with [DISPLAY ALL ITEMS IN Q16 THAT ARE <7]?

[OPEN END: RECORD VERBATIM]

Q17. Overall, how satisfied are you with Duke Energy's Save Energy and Water Kit Program?

[DISPLAY IF MODE=PHONE] [IF NEEDED: Please use that same 0 to 10 scale, where 0 is very dissatisfied and 10 is very satisfied.]

0.	0. Very dissatisfied
1.	1.
2.	2
3.	3
4.	4
5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10. Very satisfied
98.	Don't Know

[ASK IF ANY PART OF Q11 = 1]

Q18. Have you (or anyone in your home) uninstalled any of the items from the kit that you had previously installed?

[SINGLE RESPONSE]

1. Yes
2. No
98. Don't know

[ASK IF Q18 = 1]

Q19. Which of the items did you uninstall?

[Interviewer: Record the response, then prompt with the list items.]

[MULTIPLE RESPONSE]

1. [DISPLAY IF Q11a = 1] Showerhead[s]
2. [DISPLAY IF Q11b = 1] Kitchen faucet aerator
3. [DISPLAY IF Q11c = 1] Bathroom faucet aerator[s]
4. [DISPLAY IF Q11d = 1] Pipe tape
98. Don't know [EXCLUSIVE ANSWER]

[ASK IF Q19.1 = 1 AND Q12 = 1]

Q20. Did you uninstall one or both of the showerheads you had previously installed?

[SINGLE RESPONSE]

1. I uninstalled both
2. I only uninstalled one of the showerheads
98. Don't know

[ASK IF Q19.3 = 1 AND Q13 = 2-4]

Q21. How many bathroom faucet aerators did you uninstall?

[SINGLE RESPONSE]

1. One [DISPLAY IF Q13 = 1-4]
2. Two [DISPLAY IF Q13 = 2-4]
3. Three [DISPLAY IF Q13 = 3-4]
4. Four [DISPLAY IF Q13 = 4]

98. Don't know

[ASK IF ANY OF Q19.1-4 IS SELECTED]

Q22. Why were those items uninstalled?

[READ IF MODE=PHONE] Let's start with...

[Interviewer: Read each item]

[MULTIPLE RESPONSE]

DISPLAY ONLY THOSE 1-6 ITEMS THAT WERE SELECTED IN Q19	Item	Reason
	a. Showerhead	1. It was broken 2. I didn't like how it worked 3. I didn't like how it looked, or 96. Some other reason (specify: _____) 98. Don't know
	b. Kitchen faucet aerator	Repeat reason options
	c. Bathroom faucet aerator	Repeat reason options
	d. Pipe tape	Repeat reason options

[ASK IF ANY ITEMS NOT SELECTED IN Q11, OR Q10 = 2]

Q23. You said you haven't installed the following items. Which of the following do you plan to install in the next three months?

[Interviewer: Record the response, then prompt with the list items.]

[MULTIPLE RESPONSE] [DISPLAY ALL IF Q10 = 2]

1. [DISPLAY IF NOT SELECTED IN Q11] Showerhead
2. [DISPLAY IF NOT SELECTED IN Q11] Kitchen faucet aerator
3. [DISPLAY IF NOT SELECTED IN Q11] Bathroom faucet aerator
4. [DISPLAY IF NOT SELECTED IN Q11] Pipe tape
5. I'm not planning on installing any of these in the next three months [EXCLUSIVE ANSWER]
98. Don't know [EXCLUSIVE ANSWER]

[ASK IF ANY 1-6 OPTIONS WERE NOT SELECTED IN Q23 OR OPTION "NONE" WAS SELECTED]

Q24. What's preventing you from installing those items? Let's start with....

[Interviewer: Read items]

[MULTIPLE RESPONSE]

DISPLAY IF	Item	Reason
Q23a was not selected	a. Showerhead	Use multiple response options below
Q23b was not selected	b. Kitchen faucet aerator	Use multiple response options below

Q23c was not selected	c. Bathroom faucet aerator	Use multiple response options below
Q23d was not selected	d. Pipe tape	Use multiple response options below

[MULTIPLE RESPONSE OPTIONS FOR Q24]

[PHONE CALLERS: DO NOT READ, CODE VERBATIM RESPONSES]

1. Didn't know what that was
2. Tried it, didn't fit [*DOES NOT DISPLAY FOR PIPE WRAP*]
3. Tried it, didn't work as intended (Please specify: _____)
4. Haven't gotten around to it
5. Current one is still working [*DOES NOT DISPLAY FOR PIPE WRAP*]
6. Takes too much time to install it/No time/Too busy
7. Too difficult to install it, don't know how to do it
8. Don't have the tools I need
9. Don't have the items any longer (threw away, gave away)
10. [DISPLAY IF Q23.1 was displayed but not selected] Already have efficient showerhead
[DISPLAY IF Q23.2 was displayed but not selected] Already have efficient kitchen faucet aerator
[DISPLAY IF Q23.3 was displayed but not selected] Already have efficient bathroom faucet aerators
[DISPLAY IF Q23.4 was displayed but not selected] Already have pipe tape on my hot water pipe
96. Other, please specify: [OPEN-ENDED RESPONSE]
98. Don't know [*EXCLUSIVE ANSWER*]

[ASK IF Q11b = 1 AND Q19 KITCHEN FAUCET AERATOR OPTION WAS NOT SELECTED]

Q25. Your efficient kitchen faucet aerator has three settings to adjust the flow of water. Have you adjusted this setting?

1. Yes
2. No
3. Don't know

Q26. [If Q25= Yes] What flow setting is the kitchen faucet aerator currently set at? Please go over to your kitchen sink if you need to check.

1. 0.5 GPM (lowest flow setting – “soaping mode”)
2. 1.0 GPM (middle flow setting – “ecofriendly mode”)
3. 1.5 GPM (highest flow setting – “power rinse mode”)

4. Don't Know

Q27. [If Q26 = 1,2, or 3] How often do you use that flow setting?

1. Not very often
2. About half the time
3. Most of the time
4. All the time
98. Don't Know

Q28. [If Q27= 1 or 2] What flow setting do you use most regularly?

1. 0.5 GPM (lowest flow setting – “soaping mode”)
2. 1.0 GPM (middle flow setting – “ecofriendly mode”)
3. 1.5 GPM (highest flow setting – “power rinse mode”)
98. Don't Know

[ASK IF Q11a = 1 AND AT LEAST ONE SHOWERHEAD STILL INSTALLED]

Q29. On average, what is the typical shower length in your household?

[SINGLE RESPONSE]

1. One minute or less
2. Two to four minutes
3. Five to eight minutes
4. Nine to twelve minutes
5. Thirteen to fifteen minutes
6. Sixteen to twenty minutes
7. Twenty-one to thirty minutes
8. More than thirty minutes
98. Don't know

[ASK IF AT LEAST ONE SHOWERHEAD STILL INSTALLED]

Q30. [DISPLAY IF TWO SHOWERHEADS STILL INSTALLED: Thinking of the efficient showerhead you installed that gets the most usage...]

[DISPLAY IF ONE SHOWERHEAD STILL INSTALLED: Thinking of the efficient showerhead currently installed in your home...]

On average, how many showers per day are taken in this shower?

[SINGLE RESPONSE]

1. Less than one
2. One
3. Two

4. Three
5. Four
6. Five
7. Six
8. Seven
9. Eight or more
98. Don't know

[ASK IF TWO SHOWERHEADS STILL INSTALLED]

Q31. Thinking of the other efficient showerhead you installed...
On average, how many showers per day are taken in this shower?

[SINGLE RESPONSE]

1. Less than one
2. One
3. Two
4. Three
5. Four
6. Five
7. Six
8. Seven
9. Eight or more
98. Don't know

Q32. [This question was moved to demographics section – but not renumbered for programming purposes]

NTG

[IF ANY PART OF Q11 = 1 AND IT'S NOT THE CASE THAT ALL PARTS OF Q19=SELECTED (THAT IS, THEY INSTALLED ANYTHING AND DID NOT UNINSTALL EVERYTHING THEY INSTALLED)]

Q33. If you had not received the free efficiency items in the kit, would you have purchased and installed any of these same items within the next year?

1. Yes
2. No
98. Don't know

[If Q33 = 1]

Q34. What items would you have purchased and installed within the next year?

[MULTIPLE RESPONSES]

1. [IF AT LEAST ONE SHOWERHEAD IS STILL INSTALLED] Energy-efficient showerhead[s]
2. [IF Q11b = 1 AND Q19.2 NOT SELECTED] Energy-efficient kitchen faucet aerator
3. [IF AT LEAST ONE BATHROOM AERATOR IS STILL INSTALLED] Energy-efficient bathroom faucet aerator[s]
4. [IF Q11d = 1 AND Q19.4 NOT SELECTED] Pipe tape
98. Don't know [EXCLUSIVE ANSWER]

[ASK IF Q34.1=1 AND TWO SHOWERHEADS ARE STILL INSTALLED]

Q35. If you had not received them in your free kit, how many energy-efficient showerheads would you have purchased and installed within the next year?

[SINGLE RESPONSE]

1. One
2. Two
98. Don't know

[ASK Q34.3=1 AND IF MORE THAN ONE BATHROOM AERATOR IS STILL INSTALLED]

Q36. If you had not received them in your free kit, how many energy-efficient bathroom aerators would you have purchased and installed within the next year?

[SINGLE RESPONSE]

1. One
2. Two
3. Three [DISPLAY IF AT LEAST THREE BATHROOM AERATORS ARE STILL INSTALLED]
4. Four [DISPLAY IF FOUR BATHROOM AERATORS ARE STILL INSTALLED]
98. Don't know

[IF Q33 WAS DISPLAYED]

Q37. Now, thinking about the energy and water savings items that were provided in the kit - using a scale from 0 to 10, where 0 means "not at all influential" and 10 means "extremely influential," how influential were the following factors on your decision to install the items from the kit? How influential was...

[Interviewer: If respondent says, "Not applicable - I didn't get/use that," then follow up with: "So would you say it was "not at all influential?" and probe to code.]

[MATRIX QUESTION: SCALE]

Elements	Responses
The fact that the items were free	0-10 scale with DK
The fact that the items were mailed to your house	0-10 scale with DK
Information provided by Duke Energy about how the items would save energy and water	0-10 scale with DK
Other information or advertisements from Duke Energy, including its website	0-10 scale with DK

Q38. Since receiving your kit from Duke Energy, what **new** behaviors has your household adopted to help save energy at home? Please only consider new **behaviors** that your household has adopted since receiving the kit.

[MULTIPLE RESPONSE] [Interviewer: Do not read list. After each response ask, "Anything else?"]

1. Not applicable - no new behaviors since receiving kit [EXCLUSIVE ANSWER]
2. Turn off lights when not in a room
3. Turn off furnace when not home
4. Turn off air conditioning when not home
5. Changed thermostat settings to use less energy
6. Used fans instead of air conditioning
7. Turn off electronics when we are not using them
8. Take shorter showers
9. Turned water heat thermostat down
10. Turn off water when brushing teeth
11. Other (specify: _____)
98. Don't know [EXCLUSIVE ANSWER]

Q39. On a scale of 0 to 10, where 0 means "not at all influential" and 10 means "extremely influential," how much influence did Duke Energy's kit and materials on saving energy have on your decision to [LIST ALL RESPONSES FROM Q38].

0 – Not at all influential	1	2	3	4	5	6	7	8	9	10 – Extremely influential	98 Don't know
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Q40. Since receiving your kit from Duke Energy, have you purchased and installed any other products or made any improvements to your home to help save energy?

1. Yes
2. No
98. Don't know

[If Q40 = 1]

Q41. What **products** have you purchased and installed to help save energy in your home?

[Do not read list. After each response, ask, "Anything else?"] [MULTIPLE RESPONSE]

1. Bought energy efficient appliances
2. Moved into an ENERGY STAR home
3. Bought efficient heating or cooling equipment
4. Bought efficient windows
5. Added insulation
6. Sealed air leaks in windows, walls, or doors
7. Sealed or insulated ducts
8. Bought LEDs
9. Bought CFLs
10. Installed an energy efficient water heater
11. None – no other actions taken
96. Other, please specify: _____
98. Don't know [EXCLUSIVE ANSWER]

[If Q41 = 2]

Q42. Is Duke Energy still your gas or electricity utility?

1. Yes
2. No
98. Don't know

[ASK IF Q41<>11, 98, OR 99]

Q43. Did you get a rebate from Duke Energy for any of those products or services? If so, which ones? Please select all products and services for which you received Duke Energy rebates. [MULTIPLE RESPONSE]

[LOGIC] Item
[IF Q41.1 IS SELECTED] 1. Bought energy efficient appliances
[IF Q41.2 IS SELECTED] 2. Moved into an ENERGY STAR home
[IF Q41.3 IS SELECTED] 3. Bought efficient heating or cooling equipment
[IF Q41.4 IS SELECTED] 4. Bought efficient windows
[IF Q41.5 IS SELECTED] 5. Added insulation
[IF Q41.6 IS SELECTED] 6. Sealed air leaks in windows, walls, or doors
[IF Q41.7 IS SELECTED] 7. Sealed or insulated ducts
[IF Q41.8 IS SELECTED] 8. Bought LEDs
[IF Q41.9 IS SELECTED] 9. Bought CFLs
[IF Q41.10 IS SELECTED] 10. Installed an energy efficient water heater
[IF Q41.96 IS SELECTED] [Q41 open ended response]
I did not get any Duke rebates [EXCLUSIVE ANSWER]
Don't know [EXCLUSIVE ANSWER]

[IF Q41.8 IS SELECTED]

Q44. Duke Energy's website has a tool that helps you find discounted LEDs in your area. Duke Energy's website also has an online store where you can purchase discounted LEDs and have them shipped directly to your home. Did you use either of these Duke Energy services to acquire your LEDs?

1. Yes
2. No
98. Don't know

[IF Q41.9 IS SELECTED]

Q45. Duke Energy's website has a tool that helps you find discounted CFLs in your area. Duke Energy's website also has an online store where you can purchase discounted CFLs and have them shipped to your home. Did you use either of these Duke Energy services to acquire your CFLs?

1. Yes
2. No
98. Don't know

[ASK IF ANY ITEM IN Q41 WAS SELECTED]

Q46. On a scale of 0 to 10, where 0 means "not at all influential" and 10 means "extremely influential", how much influence did the Duke Energy Save Energy and Water Kit Program have on your decision to...

[MATRIX QUESTION: SCALE]

[LOGIC] Item	Response
[IF Q41.1 IS SELECTED] 1. Buy energy efficient appliances	0-10 scale with DK
[IF Q41.2 IS SELECTED] 2. Move into an ENERGY STAR home	0-10 scale with DK
[IF Q41.3 IS SELECTED] 3. Buy efficient heating or cooling equipment	0-10 scale with DK
[IF Q41.4 IS SELECTED] 4. Buy efficient windows	0-10 scale with DK
[IF Q41.5 IS SELECTED] 5. Add insulation	0-10 scale with DK
[IF Q41.6 IS SELECTED] 6. Seal air leaks in windows, walls, or doors	0-10 scale with DK
[IF Q41.7 IS SELECTED] 7. Seal or insulate ducts	0-10 scale with DK
[IF Q41.8 IS SELECTED] 8. Buy LEDs	0-10 scale with DK
[IF Q41.9 IS SELECTED] 9. Buy CFLs	0-10 scale with DK
[IF Q41.10 IS SELECTED] 10. Install an energy efficient water heater	0-10 scale with DK
[IF Q41.96 IS SELECTED] [Q41 open ended response]	0-10 scale with DK

[ASK IF Q41.1 IS SELECTED AND Q46.1 <> 0]

Q47. What kinds of appliance(s) did you buy?



[Do not read list] [MULTIPLE RESPONSE]

1. Refrigerator
2. Stand-alone Freezer
3. Dishwasher
4. Clothes washer
5. Clothes dryer
6. Oven
7. Microwave
96. Other, please specify: _____
98. Don't know
99. Refused

[ASK IF Q47 = 1-96]

Q48. Was the [INSERT Q47 RESPONSE] an ENERGY STAR or high-efficiency model?

[SINGLE RESPONSE]

1. Yes
2. No
98. Don't know
99. Refused

[REPEAT THIS QUESTION FOR EACH ITEM MENTIONED IN Q47]

[ASK IF Q47 = 5]

Q49. Does the new clothes dryer use natural gas?

1. Yes - it uses natural gas
2. No – does not use natural gas
98. Don't know
99. Refused

[ASK IF Q41.3 IS SELECTED AND Q46.3 > 0]

Q50. What type of heating or cooling equipment did you buy?

[Do not read list] [MULTIPLE RESPONSE]

1. Central air conditioner
2. Window/room air conditioner unit
3. Wall air conditioner unit
4. Air source heat pump
5. Geothermal heat pump

- 6. Boiler
- 7. Furnace
- 8. Wifi-enabled thermostat
- 96. Other, please specify: _____
- 98. Don't know
- 99. Refused

[ASK IF Q50= 6-7]

Q51. Does the new [INSERT Q50 RESPONSE] use natural gas?

- 1. Yes - it uses natural gas
- 2. No – does not use natural gas
- 98. Don't know
- 99. Refused

[ASK IF Q50= 1-7, 96]

Q52. Was the [INSERT Q50 RESPONSE] an ENERGY STAR or high-efficiency model?

[SINGLE RESPONSE]

- 1. Yes
- 2. No
- 98. Don't know
- 99. Refused

[REPEAT THIS QUESTION FOR EACH ITEM MENTIONED IN Q50, EXCLUDING wifi-enabled thermostat]

[ASK IF Q41.4 IS SELECTED AND Q46.4 > 0]

Q53. Do you know how many windows you installed??

- 1. Yes [*please specify how many you installed in the box below:* _____]
- 2. No

[ASK IF Q41.5 IS SELECTED AND Q46.5 > 0]

Q54. Please let us know what spaces you added insulation to. Also, let us know the proportion of each space you added insulation to (for example, if you added insulation that covered your entire attic space, you would type in 100%).

	Check here for each space you added insulation to	Use these boxes to type in the approximate proportion of each space you added insulation to
--	---	---

Attic		
Walls		
Below the floor		

[ASK IF Q41.8 IS SELECTED AND Q46.8 > 0]

Q55. Do you know how many LEDs you installed at your property?

1. Yes [*please specify how many you installed in the box below:* _____]
2. No

[ASK IF Q41.9 IS SELECTED AND Q46.9 > 0]

Q56. Do you know how many CFLs you installed at your property?

1. Yes [*please specify how many you installed in the box below:* _____]
2. No

[ASK IF Q41.10 IS SELECTED AND Q46.10 > 0]

Q57. Does the new water heater use natural gas?

1. Yes - it uses natural gas
2. No – does not use natural gas
98. Don't know
99. Refused

[ASK IF Q41.10 IS SELECTED AND Q46.10 > 0]

Q58. Which of the following water heaters did you purchase?

1. A traditional water heater with a large tank that holds the hot water
2. A tankless water heater that provides hot water on demand
3. A solar water heater
4. Other, please specify: _____
98. Don't know
99. Refused

[ASK IF Q41.10 IS SELECTED AND Q46.10 > 0]

Q59. Is the new water heater an ENERGY STAR model?

[SINGLE RESPONSE]

1. Yes
2. No
98. Don't know

99. Refused

Demographics

Lastly, we have some basic demographic questions for you. Please be assured that your responses are confidential and are for statistical purposes only.

Q60. Which of the following types of housing units would you say best describes your home?
It is . . . ?

1. Single-family detached house
2. Single-family attached home (such as a townhouse or condo)
3. Duplex, triplex or four-plex
4. Apartment or condominium with 5 units or more
5. Manufactured or mobile home
6. Other _____
98. Don't know
99. Prefer not to say

Q61. How many showers are in your home? Please include both stand-up showers and bathtubs with showerheads.

1. One
2. Two
3. Three
4. Four
5. Five or more
98. Don't know

Q62. How many bathroom sink faucets are in your home? (Keep in mind that some bathrooms may have multiple bathroom sink faucets in them)

1. One
2. Two
3. Three
4. Four
5. Five
6. Six
7. Seven
8. Eight or more
98. Don't know

Q63. How many kitchen faucets are in your home?

1. One
2. Two
3. Three
4. Four or more
98. Don't know

[Q32] What fuel type does your water heater use?

5. Electric
6. Natural Gas
7. Other, please specify: [OPEN-ENDED RESPONSE]
98. Don't know

Q64. How many square feet of living space are there in your residence, including bathrooms, foyers and hallways (exclude garages, unfinished basements, and unheated porches)?

1. Less than 500 square feet
2. 500 to under 1,000 square feet
3. 1,000 to under 1,500 square feet
4. 1,500 to under 2,000 square feet
5. 2,000 to under 2,500 square feet
6. 2,500 to under 3,000 square feet
7. Greater than 3,000 square feet
98. Don't know
99. Prefer not to say

Q65. Do you or members of your household own your home, or do you rent it?

1. Own / buying
2. Rent / lease
3. Occupy rent-free
98. Don't know
99. Prefer not to say

Q66. Including yourself, how many people currently live in your home year-round?

1. I live by myself
2. Two people
3. Three people
4. Four people
5. Five people
6. Six people
7. Seven people
8. Eight or more people
98. Don't know

99. Prefer not to say

Q67. What was your total annual household income for 2016, before taxes?

1. Under \$20,000
2. 20 to under \$30,000
3. 30 to under \$40,000
4. 40 to under \$50,000
5. 50 to under \$60,000
6. 60 to under \$75,000
7. 75 to under \$100,000
8. 100 to under \$150,000
9. 150 to under \$200,000
10. \$200,000 or more
98. Don't know
99. Prefer not to say

Q68. What is the highest level of education achieved among those living in your household?

1. Less than high school
2. Some high school
3. High school graduate or equivalent (such as GED)
4. Trade or technical school
5. Some college (including Associate degree)
6. College degree (Bachelor's degree)
7. Some graduate school
8. Graduate degree, professional degree
9. Doctorate
98. Don't know
99. Prefer not to say

Appendix E DEP Participant Survey Results

This section reports the results from each question in the DEP participant survey. Since the results reported in this appendix represent the “raw” data (that is, none of the open-ended responses have been coded and none of the scale questions have been binned), some values may be different from those reported in the Process Evaluation Findings chapter (particularly: percentages in tables with “Other” categories and scale response questions). Only respondents who completed the survey are included in the following results.

- Q1. [Read if mode = phone] Hi, I’m _____, calling on behalf of Duke Energy. We are calling about the Save Energy and Water Kit you got from Duke Energy.

This kit included faucet aerators, one or two showerheads, and pipe tape that can help you save water and energy in your home. Do you recall receiving this kit?

Response Option	Percent (n=94)
Yes	100%
No	0%
Don’t know	0%

- Q2. [Display if mode = web] We are conducting surveys about the Save Energy and Water Kit you got from Duke Energy. This kit included faucet aerators, one or two showerheads, and pipe tape that can help you save water and energy in your home.

Do you recall receiving this kit?

Response Option	Percent (n=37)
Yes	100%
No	0%
Don’t know	0%

- Q3. What motivated you to request a free Save Energy and Water Kit from Duke Energy?

Response Option	Percent (n=131)*
Wanted to conserve water	70%
Wanted to conserve electricity	60%
It was free	53%
It was offered by Duke Energy	34%
It was easy	33%
Other	7%
Don't know	0%

*Multiple responses were allowed for this question

Verbatim Response	Count (n=9)
The bill kept going up	1
To save money	1
savings	1

The tone of the letter was “you need to do this right now”	1
Needed a new shower head-thank you	1
Needed to update things, old house	1
Save money	1
money	1
My husband wanted to try it out	1

Q4. Did you read the included instructions on how to install the items that came in the kit?

Response Option	Percent (n=131)
Yes	84%
No	12%
Don't remember	4%

Q5. [Ask if Q4 = YES] On a scale from 0 to 10, where 0 is not at all helpful and 10 is very helpful, how helpful were the instructions on how to install the items that came in the kit?

Response Option	Percent (n=110)
0- Not at all helpful	0%
1	0%
2	0%
3	0%
4	0%
5	4%
6	2%
7	11%
8	17%
9	16%
10 - Very helpful	47%
Don't Know	3%

Q6. [Ask if Q5<7] What might have made the instructions more helpful?

Verbatim Response	Count (n=6)
Can't remember	1
comparison information to understand if the items included in the kit were superior/inferior to existing fixtures	1
its hard to say. I had a plumber install the shower head	1
More pictures on how to install	1
n/a	1
Specific applications	1

Q7. Did you watch any of Duke Energy's online how-to videos on how to install the items that came in the kit?

Response Option	Percent (n=131)
-----------------	-----------------

Yes	7%
No	92%
Don't know	1%

- Q8. [Ask if Q7 = YES] On a scale from 0 to 10, where 0 is not at all helpful and 10 is very helpful, how helpful were Duke Energy's online how-to videos on how to install the items that came in the kit?

Response Option	Percent (n=9)
0- Not at all helpful	0%
1	0%
2	0%
3	0%
4	0%
5	22%
6	11%
7	0%
8	0%
9	11%
10 - Very helpful	56%
Don't know	0%

- Q9. [Ask if Q8<7] What might have made the instructional videos more helpful?

Verbatim Response	Count (n=3)
I'm not good with computers.	1
shorter	1
They were ok	1

- Q10. Have you or anyone else installed any of those items in your home, even if they were taken out later?

Response Option	Percent (n=131)
Yes	85%
No	15%
Don't Know	0%

- Q11. [Ask if Q10 = YES] Which of the items did you install, even if they were taken out later?

Response Option	Percent (n=111)*
Showerhead	82%
Bathroom faucet aerator	66%
Kitchen faucet aerator	58%
Pipe tape	47%

I don't remember	0%
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*Multiple responses were allowed for this question

- Q12. [Ask if Q11 = SHOWERHEAD AND KIT_SIZE= MEDIUM] Your kit contained two showerheads. Did you install one or both of the showerheads in the kit, even if one or both were taken out later?

Response Option	Percent (n=71)
I installed both	49%
I only installed one showerhead	49%
Don't know	2%

- Q13. [Ask if Q11 = BATHROOM FAUCET AERATOR] How many of the bathroom faucet aerators from the kit did you install in your home, even if one or more were taken out later?

Response Option	Percent (n=73)
One	30%
Two	56%
Three	10%
Four	4%
Don't know	0%

- Q14. [Ask if Q11 = PIPEWRAP] Did you install all of the pipe insulation that was included with the kit?

Response Option	Percent (n=52)
Yes	81%
No	13%
Don't know	6%

- Q15. [Ask if Q14 is displayed] About how many feet of the pipe extruding from your water heater did you tape with the insulation **that came in the kit**? Please go over to your water heater if you need to check.

Response Option	Percent (n=52)
About three feet or less	42%
About five feet	15%
About ten feet	8%
About fifteen feet or more	0%
Don't know	35%

- Q16. [Ask if any part of Q11 = YES] Overall, how satisfied are you with the item[s] you installed?

Showerhead



Response Option	Percent (n=91)
0 - Very dissatisfied	2%
1	0%
2	2%
3	0%
4	1%
5	8%
6	2%
7	9%
8	21%
9	8%
10 - Very satisfied	47%
Don't know	0%

Kitchen Faucet Aerator

Response Option	Percent (n= 64)
0 – Very dissatisfied	0%
1	0%
2	0%
3	5%
4	0%
5	5%
6	5%
7	8%
8	19%
9	16%
10 - Very satisfied	42%
Don't know	2%

Bathroom Faucet Aerator

Response Option	Percent (n= 73)
0 – Very dissatisfied	1%
1	0%
2	0%
3	0%
4	3%
5	4%
6	4%
7	12%
8	15%
9	16%
10 - Very satisfied	43%
Don't know	1%

Pipe Tape

Response Option	Percent (n= 52)
-----------------	-----------------

0 – Very dissatisfied	0%
1	0%
2	0%
3	0%
4	2%
5	6%
6	4%
7	4%
8	15%
9	4%
10 - Very satisfied	56%
Don't know	10%

Q16a. Can you please explain any dissatisfaction you had with [DISPLAY ALL ITEMS IN Q16 THAT ARE <7]?

Showerhead

Verbatim Response	Count (n=14)
could not get any water pressure	1
Has not really changed anything	1
I have kids and we really needed to switch back to the shower head that has a hose and handle in order to get their hair rinsed well.	1
I realize it's there to save water. It just doesnt have much pressure.	1
I wasn't really dissatisfied, I had to adjust to a different amount of water pressure.	1
Insufficient pressure when installed.	1
It takes time to get hot water	1
None	1
pressure not strong enough	1
The head itself is nice... I just prefer having the handheld on a hose type.	1
The water pressure is much too low. And due to that it takes even longer than usual to get hot. I'm probably wasting more water as a result.	1
There is nothing wrong with the shower head it's just that the flow/amount of water we get in the shower is substantially less. While it does conserve water it makes showering a lot less enjoyable.	1
Very basic showerhead	1
We have a Rinnai water heater. This shower head did not have enough power to activate the hot water consistently. The shower would suddenly go ice cold. After 2 months we put back our plain 10 years old shower head. This did not work for us. Very disappointed.	1

Kitchen Faucet Aerator

Verbatim Response	Count (n=9)
It didn't match the metal finish on my faucet and it made it look bad, plus we have a spray hose already so it was not really an improvement	1
It doesn't have enough pressure. It cuts the pressure a lot in the water.	1

It is very splashy on the higher settings. On the lower setting it's okay, but it's harder to wash dishes on either setting.	1
On the lowest setting it doesn't produce a lot of water and turning it to a higher setting gets water everywhere when washing off the dishes.	1
pressure not strong enough	1
They all work pretty well...All in all I have no complaints.	1
Very low flow/pressure so unable to create soap for washing dishes.	1
Water pressure not strong enough	1
Water splashed everywhere	1

Bathroom Faucet Aerator

Verbatim Response	Count (n=8)
As I said, all in all, I really have no complaints.	1
Flow was too slow	1
it didn't work that well, leaking	1
It made the flow too weak...	1
Not enough water pressure.	1
pressure not strong enough	1
Same low pressure so took out in master bathroom, left in children bathroom.	1
Terribly thin and slow flow.	1

Pipe Tape

Verbatim Response	Count (n=6)
did not use it all	1
didn't see any difference	1
does not stay on	1
none	1
None	1
The pipe tape seemed to be of good quality, but it was hard for me to install in tight quarters. The split foam rubber type insulation that comes in long sections would have been easier to put in, but maybe harder to ship	1

Q17. Overall, how satisfied are you with Duke Energy's Save Energy and Water Kit Program?

Response Options	Percent (n=111)
0 - Very dissatisfied	2%
1	0%
2	0%
3	1%
4	2%
5	1%
6	5%
7	5%
8	15%
9	16%
10 - Very satisfied	53%

Don't know	0%
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Q18. [Ask if any part of Q11 = YES] Have you (or anyone in your home) uninstalled any of the items from the kit that you had previously installed?

Response Option	Percent (n=111)
Yes	15%
No	82%
Don't know	3%

Q19. [Ask if Q18 = YES] Which of the items did you uninstall?

Response Option	Count (n=17)*
Showerhead	9
Kitchen faucet aerator	6
Bathroom faucet aerator	7
Pipe tape	1
Don't know	0

*Multiple responses were allowed for this question

Q20. [Ask if Q19 = SHOWERHEAD and Q12 = INSTALLED BOTH] Did you uninstall one or both of the showerheads you had previously installed?

Response Option	Percent (n=3)
I uninstalled both	67%
I only uninstalled one of the showerheads	33%
Don't know	0%

Q21. [Ask if Q19 = BATHROOM FAUCET AERATOR and Q13 = 2-4] How many bathroom faucet aerators did you uninstall?

Response Option	Percent (n=3)
One	67%
Two	33%
Three	0%
Four	0%
Don't know	0%

Q22. [Ask if any item of Q19 is selected] Why were those items uninstalled?

Showerhead

Response Option	Percent (n=9)*
It was broken	11%
Didn't like how it worked	78%

Didn't like how it looked	0%
Other	44%
Don't know	0%

*Multiple responses were allowed for this question

Verbatim "Other" Responses	Count (n=4)
Didn't work with our Rinnai water heater. Not enough pressure to keep the hot water working. Suddenly ice cold showers.	1
didn't like lack of water pressure	1
I just prefer the handheld type on the hose.	1
It did not have enough water pressure.	1

Kitchen faucet aerator

Response Options	Percent (n=6)*
It was broken	0%
Didn't like how it worked	100%
Didn't like how it looked	17%
Other	0%
Don't know	0%

*Multiple responses were allowed for this question

Bathroom faucet aerator

Response Options	Percent (n=7)*
It was broken	0%
Didn't like how it worked	86%
Didn't like how it looked	0%
Other	14%
Don't know	14%

*Multiple responses were allowed for this question

Verbatim "Other" Response	Count (n=1)
Extremely restricted flow	1

Pipe Tape

Response Options	Percent (n=1)*
It was broken	0%
Didn't like how it worked	0%
Didn't like how it looked	100%
Other	100%
Don't know	0%

*Multiple responses were allowed for this question

Verbatim "Other" Response	Count (n=1)
Kept falling off	1

Q23. [Ask if any items not selected in Q11 or Q10 = NO] You said you haven't installed the following items. Which of the following do you plan to install in the next three months?

Response Option	Percent (total n=131)*
Showerhead	35%
Kitchen faucet aerator	18%
Bathroom faucet aerator	31%
Pipe tape	20%
I'm not planning on installing any of these in the next three months	44%
Don't know	26%

*Multiple responses were allowed for this question

Q24. [Ask if any 1-6 options were not selected in Q23 or option "none" was selected] What's preventing you from installing those items?

Showerhead

Response Option	Percent (n=26)*
Already have an efficient showerhead	46%
Current one is still working	42%
Too difficult to install it, don't know how to do it	4%
Tried it, didn't fit	4%
Takes too much time to install it / No time / Too busy	4%
Tried it, didn't work as intended (please explain in the box below)	0%
Don't have the items any longer (threw away, gave away)	0%
Haven't gotten around to it	0%
Don't have the tools I need	0%
Didn't know what that was	0%
Other	19%
Don't know	4%

*Multiple responses were allowed for this question

Verbatim "Other" Response	Count (n=5)
use handheld	1
I have a removable shower head with hose so it doesn't work	1
I have a hand held shower	1
I like the shower head I have better than this one	1
Expect to be moving in the next 6 months	1

Kitchen faucet aerator

Response Option	Percent (n=55)*
-----------------	-----------------

Tried it, didn't fit	31%
Current one is still working	27%
Already have an efficient kitchen faucet aerator	16%
Haven't gotten around to it	7%
Too difficult to install it, don't know how to do it	7%
Tried it, didn't work as intended (please explain in the box below)	4%
Didn't know what that was	2%
Takes too much time to install it / No time / Too busy	2%
Don't have the items any longer (threw away, gave away)	0%
Don't have the tools I need	0%
Other	18%
Don't know	0%

*Multiple responses were allowed for this question

Verbatim "Other" Response	Count (n=10)
since the shower didnt work, we figured the facuets	1
did not receive one	1
Just purchased a new kitchen and used a facet that did the same or better.	1
I have a counter water filter system	1
purchased a new faucet for kitchen	1
It is not designed for my new faucet	1
Expect to be moving in the next 6 months	1
Wrong size-they were too large for my 3 faucets	1
already have a good aerator	1
I just remember getting the shower head, not the others	1

Bathroom Faucet Aerator

Response Option	Percent(n=40)*
Tried it, didn't fit	38%
Current one is still working	23%
Already have an efficient bathroom faucet aerator	18%
Haven't gotten around to it	10%
Too difficult to install it, don't know how to do it	10%
Takes too much time to install it / No time / Too busy	3%
Don't have the items any longer (threw away, gave away)	0%
Don't have the tools I need	0%
Tried it, didn't work as intended (please explain in the box below)	0%
Didn't know what that was	0%
Other	20%
Don't know	0%

*Multiple responses were allowed for this question

Verbatim "Other" Response	Count (n=7)
same as before	1
Husband did it; he has passed away	1
too low flow	1
Expect to be moving in the next 6 months	1
would not adapt to mine	1
wrong metal finish and stuck out too far	1
Don't remember receiving	1

Pipe Tape

Response Option	Percent (n=63) *
Already have pipetape	44%
Haven't gotten around to it	19%
Too difficult to install it, don't know how to do it	8%
Didn't know what that was	8%
Tried it, didn't work as intended (please explain in the box below)	0%
Takes too much time to install it / No time / Too busy	2%
Don't have the tools I need	2%
Don't have the items any longer (threw away, gave away)	0%
Other	16%
Don't know	6%

*Multiple responses were allowed for this question

Verbatim "Other" Response	Count (n=7)
Not sure that I need it	1
Didn't know which pipe to put it on	1
not necessary at the time	1
don't want tape on water heater	1
Really don't think it will make a difference given my house and current insulation, etc.	1
Expect to be moving in the next 6 months	1
water heater is inside	1
won't work in space needed - require more tape	1
Don't remember receiving	1
Hot water heater is inside house	1

Q25. [Ask if Q11 = SHOWERHEAD and Q19 KITCHEN FAUCET AERATOR option was not selected] Your efficient kitchen faucet aerator has three settings to adjust the flow of water. Have you adjusted this setting?

Response Option	Percent (n=58)
Yes	60%
No	35%
Don't know	5%

Q26. [Ask if Q25 = Yes] What flow setting is the kitchen faucet aerator currently set at? Please go over to your kitchen sink if you need to check.

Response Option	Percent (n=35)
0.5 GPM (lowest flow setting – “soaping mode”)	26%
1.0 GPM (middle flow setting – “eco friendly mode”)	46%
1.5 GPM (highest flow setting – “power rinse mode”)	14%
Don’t Know	14%

Q27. [Ask if Q26 = 0.5, 1.0, or 1.5 GPM] How often do you use that flow setting?

Response Option	Percent (n=30)
Not very often	10%
About half the time	10%
Most of the time	57%
All the time	23%
Don't know	0%

Q28. [If Q27 = NOT VERY OFTEN or ABOUT HALF THE TIME] What flow setting do you use most regularly?

Response Option	Percent (n=6)
0.5 GPM (lowest flow setting – “soaping mode”)	33%
1.0 GPM (middle flow setting – “eco friendly mode”)	50%
1.5 GPM (highest flow setting – “power rinse mode”)	17%
Don’t know	0%

Q29. [Ask if Q11 = SHOWERHEAD and at least one showerhead is still installed] On average, what is the typical shower length in your household?

Response Option	Percent (n=82)
One minute or less	1%
Two to four minutes	11%
Five to eight minutes	38%
Nine to twelve minutes	34%
Thirteen to fifteen minutes	6%
Sixteen to twenty minutes	4%
Twenty-one to thirty minutes	4%
More than thirty minutes	1%
Don’t know	1%

Q30. [DISPLAY IF TWO SHOWERHEADS STILL INSTALLED: Thinking of the efficient showerhead you installed that gets the most usage...]

[DISPLAY IF ONE SHOWERHEAD STILL INSTALLED: Thinking of the efficient showerhead currently installed in your home...]

On average, how many showers per day are taken in this shower?

Response Option	Percent (n=82)
Less than one	0%
One	11%
Two	32%
Three	35%
Four	13%
Six	9%
Seven	0%
Eight or more	0%
Don't know	0%

Q31. [Ask if two showerheads still installed] Thinking of the other efficient showerhead you installed...

On average, how many showers per day are taken in this shower?

Response Option	Percent (n=31)
Less than one	28%
One	31%
Two	34%
Three	3%
Four	3%
Five	0%
Six	0%
Seven	0%
Eight or more	0%
Don't know	0%

Q32. What fuel type does your water heater use?

Response Option	Percent (n=131)
Electric	79%
Natural gas	16%
Other (please specify in the box below)	2%
Don't know	3%

Verbatim "Other" Response	Count (n=2)
geo thermal	1
LP gas	1

- Q33. [Ask if any item was selected in Q11 and it's not the case that all parts of Q19=selected (that is, they installed anything and did not uninstall everything they installed)] If you had not received the free efficiency items in the kit, would you have purchased and installed any of these same items within the next year?

Response Option	Percent (n=108)
Yes	19%
No	55%
Don't know	26%

- Q34. [Ask if Q33 = YES] What items would you have purchased and installed within the next year?

Response Option	Count (n=21)*
Showerhead	16
Kitchen faucet aerator	4
Bathroom faucet aerator	10
Pipe tape	1
Don't know	2

*Multiple responses were allowed for this question

- Q35. [Ask if Q34 = SHOWERHEAD and two showerheads are still installed] If you had not received them in your free kit, how many energy-efficient showerheads would you have purchased and installed within the next year?

Response Option	Percent (n=3)
One	33%
Two	33%
Don't know	33%

- Q36. [Ask if Q34 = BATHROOM FAUCET AERATOR and if more than one bathroom aerator is still installed] If you had not received them in your free kit, how many energy-efficient bathroom aerators would you have purchased and installed within the next year?

Response Option	Percent (n=7)
One	0%
Two	43%
Three	0%
Four	14%
Don't know	43%

- Q37. [If Q33 was displayed] Now, thinking about the energy and water savings items that were provided in the kit - using a scale from 0 to 10, where 0 means "not at all influential" and 10 means "extremely influential," how influential were the following factors on your decision to install the items from the kit? *How influential was...*

The fact that the items were free

Response Option	Percent (n=108)
0- Not at all influential	0%
1	0%

2	1%
3	0%
4	1%
5	2%
6	1%
7	4%
8	9%
9	11%
10 - Extremely influential	70%
Don't know	1%

The fact that the items were mailed to your home

Response Option	Percent (n=108)
0- Not at all influential	2%
1	0%
2	0%
3	0%
4	0%
5	3%
6	1%
7	4%
8	12%
9	11%
10 - Extremely influential	66%
Don't know	2%

Information provided by Duke Energy about how the items would save energy and water

Response Option	Percent (n=108)
0- Not at all influential	0%
1	0%
2	1%
3	1%
4	0%
5	7%
6	7%
7	7%
8	15%
9	19%
10 - Extremely influential	39%
Don't know	4%

Other information or advertisements from Duke Energy, including its website

Response Option	Percent (n=108)
0- Not at all influential	9%
1	1%
2	5%

3	2%
4	5%
5	11%
6	8%
7	8%
8	13%
9	8%
10 - Extremely influential	23%
Don't know	7%

- Q38. Since receiving your kit from Duke Energy, what **new** behaviors has your household adopted to help save energy at home? Please only consider new **behaviors** that your household has adopted since receiving the kit.

Response Option	Percent (n=131)*
Not applicable - no new behaviors since receiving kit	33%
Turn off lights when not in a room	33%
Turn off furnace when not home	6%
Turn off air conditioning when not home	11%
Changed thermostat settings to use less energy	28%
Used fans instead of air conditioning	14%
Turn off electronics when we are not using them	18%
Take shorter showers	23%
Turned water heat thermostat down	8%
Turn off water when brushing teeth	32%
Other	11%
Don't know	3%

*Multiple responses were allowed for this question

Verbatim "Other" Response	Count (n=15)
led lighting	1
We already had these behaviors prior to receiving kit	1
I none	1
Limit the flow at kitchen faucet unless necessary.	1
Unplugging items so no "ghost" current	1
Wait til midnight to do the laundry	1
buy led lights	1
We are already extremely energy conscious so have not adopted any new behaviors.	1
Already do all these things.	1
Replacing lightbulbs with LEDs	1
We did most of these already	1
I would have turned my water heater down but it is taped up and controls not accessible	1

wash dishes more than using dishwasher	1
save water	1
I did these already	1

- Q39. [Ask if Q38 <> DON'T KNOW or NOT APPLICABLE]. On a scale of 0 to 10, where 0 means "not at all influential" and 10 means "extremely influential," how much influence did Duke Energy's kit and materials on saving energy have on your decision to [LIST ALL RESPONSES FROM Q38].

Response Option	Percent (n=84)
0 – Not at all influential	6%
1	2%
2	4%
3	1%
4	5%
5	8%
6	7%
7	13%
8	20%
9	11%
10 - Extremely influential	21%
Don't know	1%

- Q40. Since receiving your kit from Duke Energy, have you purchased and installed any other **products** or made any improvements to your home to help save energy?

Response Option	Percent (n=131)
Yes	30%
No	68%
Don't know	2%

- Q41. [If Q40 = YES] What **products** have you purchased and installed to help save energy in your home?

Response Option	Percent (n=39)*
Bought energy efficient appliances	33%
Moved into an ENERGY STAR home	0%
Bought efficient heating or cooling equipment	21%
Bought efficient windows	3%
Added insulation	23%
Sealed air leaks in windows, walls, or doors	28%
Sealed or insulated ducts	5%
Bought LEDs	46%
Bought CFLs	23%

Installed an energy efficient water heater	15%
None – no other actions taken	0%
Other	18%
Don't know	0%

*Multiple responses were allowed for this question

Verbatim "Other" Response	Count (n=7)
automated thermostats, lights with alexa.	1
siding, windows	1
more pipe insulation	1
received free lightbulbs from Duke	1
new faucet in bathroom and kitchen	1
Improved well liner and water purification system	1
Installed solar attic fans and solar tube in bathroom with solar nightlight	1

- Q42. [If Q41 = MOVED INTO AN ENERGY STAR HOME] Is Duke Energy still your gas or electricity utility?

Response Option	Percent (n=131)
Not asked	100%

- Q43. [Ask if Q41 <> NONE, DON'T KNOW, or REFUSED] Did you get a rebate from Duke Energy for any of those products or services? If so, which ones? Please select all products and services for which you received Duke Energy rebates.

Response Option	Count (n=39)*
Bought energy efficient appliances	0
Moved into an ENERGY STAR home	0
Bought efficient heating or cooling equipment	2
Bought efficient windows	0
Added insulation	0
Sealed air leaks in windows, walls, or doors	0
Sealed or insulated ducts	0
Bought LEDs	1
Bought CFLs	0
Installed an energy efficient water heater	0
I did not get any Duke Rebates	34
Other	0
Don't know	2

*Multiple responses were allowed for this question.

- Q44. [Ask if Q41 = BOUGHT LEDS] Duke Energy's website has a tool that helps you find discounted LEDs in your area. Duke Energy's website also has an online store where you

can purchase discounted LEDs and have them shipped directly to your home. Did you use either of these Duke Energy services to acquire your LEDs?

Response Option	Percent (n=18)
Yes	17%
No	72%
Don't know	11%

Q45. [Ask if Q41 = BOUGHT CFLS] Duke Energy's website has a tool that helps you find discounted CFLs in your area. Duke Energy's website also has an online store where you can purchase discounted CFLs and have them shipped to your home. Did you use either of these Duke Energy services to acquire your CFLs?

Response Option	Percent (n=9)
Yes	11%
No	89%
Don't know	0

Q46. [Ask if any item in Q41 was selected] On a scale of 0 to 10, where 0 means "not at all influential" and 10 means "extremely influential", how much influence did the Duke Energy Save Energy and Water Kit Program have on your decision to...

Response Option	0	1	2	3	4	5	6	7	8	9	10	Don't Know	Total (n)
Buy energy efficient appliances	31%	0%	8%	0%	0%	15%	8%	0%	0%	0%	39%	0%	13
Move into an ENERGY STAR home	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
Buy efficient heating or cooling equipment	43%	14%	0%	0%	0%	0%	0%	0%	0%	29%	14%	0%	7
Buy efficient windows	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1
Add insulation	22%	11%	0%	0%	11%	11%	0%	0%	11%	11%	22%	0%	9
Seal air leaks	9%	9%	9%	0%	9%	9%	0%	9%	0%	9%	27%	9%	11
Seal ducts	0%	0%	0%	0%	50%	0%	0%	50%	0%	0%	0%	0%	2
Buy LEDs	28%	6%	11%	0%	6%	6%	6%	0%	6%	0%	22%	11%	18
Buy CFLs	11%	0%	11%	11%	11%	11%	11%	0%	11%	11%	11%	0%	9
Install an energy efficient water heater	33%	0%	0%	17%	0%	0%	0%	0%	0%	0%	50%	0%	6
Other	29%	0%	0%	0%	14%	0%	14%	14%	14%	0%	14%	0%	7

Q47. [Ask if Q41 = BOUGHT ENERGY EFFICIENT APPLIANCES and Q46_BUY ENERGY EFFICIENT APPLIANCES > 0] What kinds of appliance(s) did you buy?

Response Option	Percent (n=9)*
Refrigerator	56%
Stand-alone freezer	0%
Dishwasher	22%
Clothes washer	44%
Clothes dryer	33%
Oven	33%
Microwave	33%
Other	11%
Don't know	0%
Refused	0%

*Multiple responses were allowed for this question

Q48. [Ask if Q47 < DON'T KNOW OR REFUSED] Was the [INSERT Q47 RESPONSE] an ENERGY STAR or high-efficiency model?

Response Option	Microwave	Refrigerator	Stand-alone Freezer	Dishwasher	Clothes washer	Clothes dryer	Oven	Other
Yes	1	5	0	2	4	3	3	1
No	0	0	0	0	0	0	0	0
Don't know	2	0	0	0	0	0	0	0
Total	3	5	0	2	4	3	3	1

Q49. [Ask if Q47 = CLOTHES DRYER] Does the new clothes dryer use natural gas?

Response Option	Percent (n=3)
Yes	67%
No	33%
Don't know	0%
Refused	0%

Q50. [Ask if Q41 = BOUGHT EFFICIENT HEATING OR COOLING EQUIPMENT and Q46_BUY EFFICIENT HEATING OR COOLING EQUIPMENT > 0] What type of heating or cooling equipment did you buy?

Response Option	Percent (n=4)*
Central air conditioner	50%
Window/room air conditioner unit	25%
Wall air conditioner unit	0%
Air source heat pump	0%
Geothermal heat pump	0%
Boiler	0%
Furnace	25%
Wifi thermostat	25%
Other	25%
Don't know	0%
Refused	0%

*Multiple responses were allowed for this question

Verbatim "Other" Response	Count (n=1)
Blanket/Tape for hot water heater	1

Q51. [Ask if Q50 = BOILER OR FURNACE] Does the new [INSERT Q50 RESPONSE] use natural gas?

Response Option	Percent (n=1)
Yes	100%
No	0%
Don't know	0%
Refused	0%

Q52. [Ask if Q50 <> WIFI-ENABLED THERMOSTAT, DON'T KNOW, OR REFUSED] Was the [INSERT Q50 RESPONSE] an ENERGY STAR or high-efficiency model?

Response Option	Other	Central air conditioner	Window / room air conditioner unit	Wall air conditioner unit	Air source heat pump	Geothermal heat pump	Boiler	Furnace
Yes	0	2	1	0	0	0	0	1
No	0	0	0	0	0	0	0	0
Don't know	1	0	0	0	0	0	0	0
Total	1	2	1	0	0	0	0	1

Q53. [Ask if Q41= BOUGHT EFFICIENT WINDOWS and Q46_BUY EFFICIENT WINDOWS >0] Do you know how many windows you installed?

Response Option	Percent (n=131)
Yes	0%
No	0%
Don't know	0%
Not asked	100%

Q54. [Ask if Q41 = ADDED INSULATION and Q46_ADD INSULATION > 0] Please let us know what spaces you added insulation to. Also, let us know the proportion of each space you added insulation to (for example, if you added insulation that covered your entire attic space, you would type in 100%).

Response Option	Percent (n=7)*
Attic	71%
Walls	14%
Below the floor	29%

*Multiple responses were allowed for this question

Attic

100	3
1530	1

Walls

Verbatim Response	Count (n=1)
75	1

Below the floor

Verbatim Response	Count (n=2)
10	1
1530	1

- Q55. [Ask if Q41 = BOUGHT LEDS and Q46_BUY LEDS > 0] Do you know how many LEDs you installed at your property?

Response Option	Percent (n=13)
Yes	100%
No	0%

[Please specify how many you installed in the box below:]

Verbatim Response	Count (n=13)
15	2
2	1
25	2
30	1
4	1
5	1
6	2
8	1
9	2

- Q56. [Ask if Q41 = BOUGHT CFLS and Q46_BUY CFLS > 0] Do you know how many CFLs you installed at your property?

Response Option	Percent (n=8)
Yes	100%
No	0%

[Please specify how many you installed in the box below:]

Verbatim Response	Count (n=8)
10	1
12	1
15	1
16	2
5	1

6	1
8	1

- Q57. [Ask if Q41 = INSTALLED AN ENERGY EFFICIENT WATER HEATER and Q46_INSTALL AN ENERGY EFFICIENT WATER HEATER > 0] Does the new water heater use natural gas?

Response Option	Percent (n=4)
Yes	50%
No	50%
Don't know	0%
Refused	0%

- Q58. [Ask if Q41 = INSTALLED AN ENERGY EFFICIENT WATER HEATER and Q46_INSTALL AN ENERGY EFFICIENT WATER HEATER > 0] Which of the following water heaters did you purchase?

Response Option	Percent (n=4)
A traditional water heater with a large tank that holds the hot water	75%
A tankless water heater that provides hot water on demand	25%
A solar water heater	0%
Other	0%
Don't know	0%
Refused	0%

- Q59. [Ask if Q41 = INSTALLED AN ENERGY EFFICIENT WATER HEATER and Q46_INSTALL AN ENERGY EFFICIENT WATER HEATER > 0] Is the new water heater an ENERGY STAR model?

Response Option	Percent (n=4)
Yes	100%
No	0%
Don't know	0%
Refused	0%

- Q60. Which of the following types of housing units would you say best describes your home?
It is . . .?

Response Option	Percent (n=131)
Single-family detached house	87%
Single-family attached home (such as a townhouse or condo)	7%
Duplex, triplex or four-plex	1%
Apartment or condo with 5 units or more	0%
Manufactured or mobile home	5%
Other	0%
Prefer not to say	0%
Don't know	1%

Q61. How many showers are in your home? Please include both stand-up showers and bathtubs with showerheads.

Response Option	Percent (n=131)
One	12%
Two	66%
Three	15%
Four	7%
Five or more	0%
Don't know	0%

Q62. How many bathroom sink faucets are in your home? (Keep in mind that some bathrooms may have multiple bathroom sink faucets in them)

Response Option	Percent (n=131)
One	5%
Two	32%
Three	34%
Four	15%
Five	10%
Six	5%
Seven	1%
Eight or more	0%
Don't know	0%

Q63. How many kitchen faucets are in your home?

Response Option	Percent (n=131)
One	88%
Two	12%
Three	0%
Four or more	0%
Don't know	0%

Q64. How many square feet of living space are there in your residence, including bathrooms, foyers and hallways (exclude garages, unfinished basements, and unheated porches)?

Response Option	Percent (n=131)
500 to under 1,000 square feet	3%
1,000 to under 1,500 square feet	30%
1,500 to under 2,000 square feet	27%
2,000 to under 2,500 square feet	14%
2,500 to under 3,000 square feet	11%
Greater than 3,000 square feet	11%
Prefer not to say	1%
Don't know	5%

Q65. Do you or members of your household own your home, or do you rent it?

Response Option	Percent (n=131)
Own / buying	97%
Rent / lease	2%
Occupy rent-free	0%
Prefer not to say	1%
Don't know	1%

Q66. Including yourself, how many people currently live in your home year-round?

Response Option	Percent (n=131)
I live by myself	18%
Two people	44%
Three people	15%
Four people	14%
Five people	5%
Six people	2%
Seven people	1%
Eight or more people	0%
Prefer not to say	1%
Don't know	0%

Q67. What was your total annual household income for 2016, before taxes?

Response Option	Percent (n=131)
Under \$20,000	8%
\$20,000 to under \$30,000	3%
\$30,000 to under \$40,000	6%
\$40,000 to under \$50,000	12%
\$50,000 to under \$60,000	6%
\$60,000 to under \$75,000	7%
\$75,000 to under \$100,000	12%
\$100,000 to under \$150,000	12%
\$150,000 to under \$200,000	5%
\$200,000 or more	3%
Prefer not to say	21%
Don't know	5%

Q68. What is the highest level of education achieved among those living in your household?

Response Option	Percent (n=131)
Less than high school	0%
Some high school	1%
High school graduate or equivalent (such as GED)	13%
Trade or technical school	5%
Some college (including Associate degree)	17%
College degree (Bachelor's degree)	32%
Some graduate school	5%
Graduate degree, professional degree	21%

APPENDIX E

DEP PARTICIPANT SURVEY RESULTS

Doctorate	2%
Prefer not to say	5%
Don't know	1%

Appendix F DEC Participant Survey Results

This section reports the results from each question in the DEC participant survey. Since the results reported in this appendix represent the “raw” data (that is, none of the open-ended responses have been coded and none of the scale questions have been binned), some values may be different from those reported in the Process Evaluation Findings chapter (particularly: percentages in tables with “Other” categories and scale response questions). Only respondents who completed the survey are included in the following results.

Q69. [Read if mode = phone] Hi, I’m _____, calling on behalf of Duke Energy. We are calling about the Save Energy and Water Kit you got from Duke Energy.

This kit included faucet aerators, one or two showerheads, and pipe tape that can help you save water and energy in your home. Do you recall receiving this kit?

Response Option	Percent (n=34)
Yes	100%
No	0%
Don’t know	0%

Q70. [Display if mode = web] We are conducting surveys about the Save Energy and Water Kit you got from Duke Energy. This kit included faucet aerators, one or two showerheads, and pipe tape that can help you save water and energy in your home.

Do you recall receiving this kit?

Response Option	Percent (n=80)
Yes	100%
No	0
Don’t know	0

Q71. What motivated you to request a free Save Energy and Water Kit from Duke Energy?

Response Option	Percent (n=114)*
Wanted to conserve water	56%
Wanted to conserve electricity	55%
It was free	41%
It was offered by Duke Energy	36%
It was easy	17%
Other	13%
Don't know	1%

*Multiple responses were allowed for this question

Verbatim Other Responses	Count (n=13)
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We already had one and it was beginning to stop up on us.	1
Wanted to save money	1
Saw it in a flyer	1
Save money	1
Save money	1
said something about 20x21 filters, but never got them	1
My Sister got one and it helped on her power bill	1
my bill is high	1
It was my daughter that did that.	1
Hip was broken, decided when I get that I can get to use the shower head, I thought i'd correct it.	1
cut expenses	1
brochure, save energy	1
a fresh pair of eyes looking at ways to improve our home	1

Q72. Did you read the included instructions on how to install the items that came in the kit?

Response Option	Percent (n=114)
Yes	82%
No	13%
Don't remember	4%

Q73. [Ask if Q4 = YES] On a scale from 0 to 10, where 0 is not at all helpful and 10 is very helpful, how helpful were the instructions on how to install the items that came in the kit?

Response Option	Percent (n=93)
1- Not at all helpful	1%
1	1%
2	1%
3	0%
4	1%
5	7%
6	3%
7	10%
8	15%
9	8%
10 - Very helpful	47%
Don't Know	5%

Q74. [Ask if Q5<7] What might have made the instructions more helpful?

Verbatim Response	Count (n=10)
Didn't fit	1
I cant think of anything.	1
If the aerators would fit my faucets they would have worked	1
it it good	1
My son installed the shower head for me and I love it.	1
No product was fine for one of the sinks would not fit the others	1
nothing	2

Nothing it was common sense instalation	1
The instructions were helpful	1

Q75. Did you watch any of Duke Energy's online how-to videos on how to install the items that came in the kit?

Response Option	Percent (n=114)
Yes	5%
No	93%
Don't remember	2%

Q76. [Ask if Q7 = YES] On a scale from 0 to 10, where 0 is not at all helpful and 10 is very helpful, how helpful were Duke Energy's online how-to videos on how to install the items that came in the kit?

Response Option	Percent (n=6)
1- Not at all helpful	0%
1	0%
2	0%
3	0%
4	0%
5	0%
6	17%
7	0%
8	33%
9	0%
10 - Very helpful	50%
Don't know	0%

Q77. [Ask if Q8<7] What might have made the instructional videos more helpful?

Verbatim Response	Count (n=1)
More detail	1

Q1. Have you or anyone else installed any of those items in your home, even if they were taken out later?

Response Option	Percent (n=114)
Yes	76%
No	24%
Don't Know	0%

Q2. [Ask if Q10 = YES] Which of the items did you install, even if they were taken out later?

Response Option	Percent (n=87)*
Showerhead	82%

Kitchen faucet aerator	57%
Bathroom faucet aerator	61%
Pipe tape	40%
I don't remember	0%

*Multiple responses were allowed for this question

- Q3. [Ask if Q11 = SHOWERHEAD AND KIT_SIZE= MEDIUM] Your kit contained two showerheads. Did you install one or both of the showerheads in the kit, even if one or both were taken out later?

Response Option	Percent (n=47)
I installed both	53%
I only installed one showerhead	47%
Don't know	2%

- Q4. [Ask if Q11 = BATHROOM FAUCET AERATOR] How many of the bathroom faucet aerators from the kit did you install in your home, even if one or more were taken out later?

Response Option	Percent (n=53)
One	42%
Two	42%
Three	11%
Four	5%
Don't know	0%

- Q5. [Ask if Q11 = PIPEWRAP] Did you install all of the pipe insulation that was included with the kit?

Response Option	Percent (n=35)
Yes	66%
No	26%
Don't know	8%

- Q6. [Ask if Q14 is displayed] About how many feet of the pipe extruding from your water heater did you tape with the insulation **that came in the kit**? Please go over to your water heater if you need to check.

Response Option	Percent(n=35)
About three feet or less	37%
About five feet	20%
About ten feet	20%
Don't know	23%

Q7. [Ask if any part of Q11 = YES] Overall, how satisfied are you with the item[s] you installed?

Showerhead

Response Option	Percent (n=71)
0 - Very dissatisfied	3%
1	0%
2	1%
3	1%
4	1%
5	1%
6	7%
7	9%
8	16%
9	10%
10 - Very satisfied	51%
Don't know	0%

Kitchen Faucet Aerator

Response Option	Percent (n=50)
0 – Very dissatisfied	6%
1	0%
2	2%
3	0%
4	2%
5	6%
6	2%
7	14%
8	8%
9	14%
10 - Very satisfied	44%
Don't know	2%

Bathroom Faucet Aerator

Response Option	Percent (n= 53)
0 – Very dissatisfied	4%
1	0%
2	0%
3	4%
4	2%
5	6%
6	2%
7	6%
8	8%
9	23%
10 - Very satisfied	47%
Don't know	0%

Pipe Tape

Response Option	Percent (n= 35)
0 – Very dissatisfied	0%
1	0%
2	0%
3	0%
4	0%
5	3%
6	6%
7	6%
8	11%
9	11%
10 - Very satisfied	60%
Don't know	3%

Q16a. Can you please explain any dissatisfaction you had with [DISPLAY ALL ITEMS IN Q16 THAT ARE <7]?

Showerhead

Verbatim Response	Count (n=10)
Did not allow enough water pressure	1
It was very cheap made	1
Leaked	1
My son complains it doesn't wet his hair evenly.	1
No pressure	1
No water pressure	1
not enough water coming out, adjusted it every way, just not enough water	1
Pressure is low	1
Water source is much weaker	1
Water to slow	1

Kitchen Faucet Aerator

Verbatim Response	Count (n=8)
Could not tell much difference from what was there. Not necessarily dissatisfied.	1
It was good	1
It's just that I'm accustom to quite a bit more pressure coming out of my kitchen faucet.	1
kitchen aerator did not fit	1
No pressure	1
No water pressure	1
Splashed too much water because of the force.	1
worked for a couple weeks and then cracked down the side of it. had to go buy one for 11.00	1

Bathroom Faucet Aerator

Verbatim Response	Count (n=9)
I never got this one	1
It restricted the pressure far too much than the previously installed aerators. I have thus far left them.	1
Low pressure	1
No pressure	1
Same as kitchen. I am on a well and have low water pressure.	1
The pressure was way too low. I ended up taking them off because I am listing my house for sale and don't want people to think there is an issue here with water pressure.	1
The same didn't help	1
the water just does not seem to flow right anymore	1
Very little water pressure but we still have these on	1

Pipe tape

Verbatim Response	Count (n=3)
Can't tell a difference	1
Don't see any difference	1
No dissatisfaction just needed more	1

Q8. Overall, how satisfied are you with Duke Energy's Save Energy and Water Kit Program?

Response Options	DEP (n=87)
0 - Very dissatisfied	0%
1	0%
2	0%
3	0%
4	2%
5	2%
6	2%
7	6%
8	20%
9	12%
10 - Very satisfied	54%
Don't know	2%

Q9. [Ask if any part of Q11 = YES] Have you (or anyone in your home) uninstalled any of the items from the kit that you had previously installed?

Response Option	DEP (n=87)
Yes	12%
No	85%
Don't know	3%

Q10. [Ask if Q18 = YES] Which of the items did you uninstall?

Response Option	Count (n= 10)*
-----------------	----------------

Showerhead	6
Kitchen faucet aerator	5
Bathroom faucet aerator	4
Pipe tape	0
Don't know	1

*Multiple responses were allowed for this question

- Q11. [Ask if Q19 = SHOWERHEAD and Q12 = INSTALLED BOTH] Did you uninstall one or both of the showerheads you had previously installed?

Response Option	Percent (n=3)
I uninstalled both	100%
I only uninstalled one of the showerheads	0%
Don't know	0%

- Q12. [Ask if Q19 = BATHROOM FAUCET AERATOR and Q13 = 2-4] How many bathroom faucet aerators did you uninstall?

Response Option	Percent (n=1)
One	0%
Two	0%
Three	0%
Four	100%
Don't know	0%

- Q13. [Ask if any item of Q19 is selected] Why were those items uninstalled?

Showerhead

Response Option	Percent (n=6)*
It was broken	0%
Didn't like how it worked	83%
Didn't like how it looked	17%
Other	33%
Don't know	0%

*Multiple responses were allowed for this question

Verbatim "Other" Responses	Count (n=2)
not enough water coming out	1
Put the Moen brand back on as I am selling the house.	1

Kitchen faucet aerator

Response Options	Percent (n=5)*
It was broken	20%

Didn't like how it worked	60%
Didn't like how it looked	0%
Other	20%
Don't know	0%

*Multiple responses were allowed for this question

Verbatim "Other" Response	Count (n=1)
We replaced our kitchen faucet with a faucet that was too big for the aerator.	1

Bathroom faucet aerator

Response Options	Percent (n=2)*
It was broken	0%
Didn't like how it worked	100%
Didn't like how it looked	0%
Other	0%
Don't know	0%

*Multiple responses were allowed for this question

Pipe tape

Response Options	Percent (n=0)*
It was broken	0%
Didn't like how it worked	0%
Didn't like how it looked	0%
Other	0%
Don't know	0%

*Multiple responses were allowed for this question

- Q14. [Ask if any items not selected in Q11 or Q10 = NO] You said you haven't installed the following items. Which of the following do you plan to install in the next three months?

Response Option	Percent (n=114)*
Showerhead	33%
Kitchen faucet aerator	28%
Bathroom faucet aerator	31%
Pipe tape	24%
I'm not planning on installing any of these in the next three months	32%
Don't know	25%

*Multiple responses were allowed for this question

- Q15. [Ask if any 1-6 options were not selected in Q23 or option "none" was selected] What's preventing you from installing those items?

Showerhead

Response Option	Percent (n=29)*
-----------------	-----------------

Already have an efficient showerhead	28%
Current one is still working	24%
Tried it, didn't fit	14%
Too difficult to install it, don't know how to do it	7%
Takes too much time to install it / No time / Too busy	3%
Tried it, didn't work as intended (please explain in the box below)	3%
Don't have the items any longer (threw away, gave away)	3%
Haven't gotten around to it	3%
Don't have the tools I need	0%
Didn't know what that was	0%
Other	21%
Don't know	0%

*Multiple responses were allowed for this question

Verbatim "Other" Response	Count (n=6)
Doesn't match our plumbing which is brushed nickel.	1
My shower head is a detachable one and this would just not help.	1
My husband likes the one we now have. He is very particular. I plan to give the showerhead to my son who just purchased a house.	1
The significant restriction on the bathroom aerator dissuaded me.... thus far.	1
I use a handheld showerhead.	1
health problems	1

Kitchen faucet aerator

Response Option	Percent (n=46)*
Tried it, didn't fit	26%
Current one is still working	20%
Already have an efficient kitchen faucet aerator	15%
Haven't gotten around to it	13%
Didn't know what that was	7%
Tried it, didn't work as intended (please explain in the box below)	4%
Too difficult to install it, don't know how to do it	2%
Takes too much time to install it / No time / Too busy	2%
Don't have the items any longer (threw away, gave away)	2%
Don't have the tools I need	0%
Other	17%
Don't know	0%

*Multiple responses were allowed for this question

Verbatim "Other" Response	Count (n=8)
Already have aerators plus didn't match faucets.	1
will not work with my current faucet	1

Lazy	1
need to include adapter, did not fit my faucet	1
didnt see this	1
Did not work with the faucet I have.	1
health problems	1
Dont recall receiving it	1

Bathroom Faucet Aerator

Response Option	Percent (n=42)*
Tried it, didn't fit	29%
Haven't gotten around to it	26%
Current one is still working	17%
Already have an efficient bathroom faucet aerator	14%
Didn't know what that was	5%
Takes too much time to install it / No time / Too busy	2%
Don't have the items any longer (threw away, gave away)	2%
Too difficult to install it, don't know how to do it	2%
Tried it, didn't work as intended (please explain in the box below)	2%
Don't have the tools I need	0%
Other	14%
Don't know	2%

*Multiple responses were allowed for this question

Verbatim "Other" Response	Count (n=6)
i will put it on	1
need to include adapter, did not fit my faucet	1
didnt recall getting one of those	1
health problems	1
n/a	1
n/a	1

Pipe Tape

Response Option	Percent (n=60)*
Haven't gotten around to it	35%
Already have pipetape	25%
Didn't know what that was	13%
Too difficult to install it, don't know how to do it	10%
Takes too much time to install it / No time / Too busy	3%
Don't have the items any longer (threw away, gave away)	2%
Tried it, didn't work as intended (please explain in the box below)	2%
Don't have the tools I need	0%
Other	20%

Don't know	5%
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*Multiple responses were allowed for this question

Verbatim "Other" Response	Count (n=12)
Pipes are inside the wall.	1
just like i said, lazy	1
I dont know if it would do any good to install it. I dont know if it would benefit me if I do install it. I dont know if it would cover all the pipes I have.	1
You're planning on installing a bath tub in the next little while and may install the pip tape then.	1
Bad back and crawl space install is difficult	1
Want to use it for my rental property	1
didnt recall getting this	1
health problems	1
Don't need it	1
just gave it away	1
Don't remember receiving pipe tape	1
because it is in the basement, dont need it	1

- Q16. [Ask if Q11 = SHOWERHEAD and Q19 kitchen faucet aerator option was not selected] Your efficient kitchen faucet aerator has three settings to adjust the flow of water. Have you adjusted this setting?

Response Option	Percent (n=45)
Yes	64%
No	27%
Don't know	9%

- Q17. [Ask if Q25 = Yes] What flow setting is the kitchen faucet aerator currently set at? Please go over to your kitchen sink if you need to check.

Response Option	Percent (n=29)
0.5 GPM (lowest flow setting – “soaping mode”)	10%
1.0 GPM (middle flow setting – “eco friendly mode”)	83%
1.5 GPM (highest flow setting – “power rinse mode”)	3%
Don't Know	3%

- Q18. [Ask if Q26 = 0.5, 1.0, or 1.5 GPM] How often do you use that flow setting?

Response Option	Percent (n=28)
Not very often	14%
About half the time	11%
Most of the time	46%
All the time	25%
Don't know	3%

- Q19. [If Q27 = NOT VERY OFTEN or ABOUT HALF THE TIME] What flow setting do you use most regularly?

Response Option	Percent (n=7)
0.5 GPM (lowest flow setting – “soaping mode”)	14%
1.0 GPM (middle flow setting – “eco friendly mode”)	86%
1.5 GPM (highest flow setting – “power rinse mode”)	0%
Don’t know	0%

- Q20. [Ask if Q11 = SHOWERHEAD and at least one showerhead is still installed] On average, what is the typical shower length in your household?

Response Option	Percent (n=65)
One minute or less	0%
Two to four minutes	11%
Five to eight minutes	49%
Nine to twelve minutes	29%
Thirteen to fifteen minutes	5%
Sixteen to twenty minutes	2%
Twenty-one to thirty minutes	0%
More than thirty minutes	0%
Don’t know	5%

- Q21. [DISPLAY IF TWO SHOWERHEADS STILL INSTALLED: Thinking of the efficient showerhead you installed that gets the most usage...]

[DISPLAY IF ONE SHOWERHEAD STILL INSTALLED: Thinking of the efficient showerhead currently installed in your home...]

On average, how many showers per day are taken in this shower?

Response Option	Percent (n=65)
Less than one	5%
One	29%
Two	49%
Three	9%
Four	3%
Six	2%
Seven	2%
Eight or more	0%
Don’t know	2%

- Q22. [Ask if two showerheads still installed] Thinking of the other efficient showerhead you installed...

On average, how many showers per day are taken in this shower?

Response Option	Percent (n=22)
Less than one	23%
One	36%
Two	27%
Three	0%
Four	5%
Five	0%
Six	0%
Seven	0%
Eight or more	0%
Don't know	9%

Q23. What fuel type does your water heater use?

Response Option	Percent (n=114)
Electric	70%
Natural gas	28%
Other (please specify in the box below)	0%
Don't know	2%

Q24. [Ask if any item was selected in Q11 and it's not the case that all parts of Q19 are selected (that is, they installed anything and did not uninstall everything they installed)] If you had not received the free efficiency items in the kit, would you have purchased and installed any of these same items within the next year?

Response Option	Percent (n=84)
Yes	34%
No	50%
Don't know	16%

Q25. [Ask if Q33 = YES] What items would you have purchased and installed within the next year?

Response Option	Count (n=29)*
Showerhead	20
Kitchen faucet aerator	6
Bathroom faucet aerator	5
Pipe tape	3
Don't know	2

*Multiple responses were allowed for this question

Q26. [Ask if Q34 = SHOWERHEAD and two showerheads are still installed] If you had not received them in your free kit, how many energy-efficient showerheads would you have purchased and installed within the next year?

Response Option	Percent (n=7)
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One	57%
Two	43%
Don't know	0%

- Q27. [Ask if Q34 = BATHROOM FAUCET AERATOR and if more than one bathroom aerator is still installed] If you had not received them in your free kit, how many energy-efficient bathroom aerators would you have purchased and installed within the next year?

Response Option	Percent (n=5)
One	20%
Two	20%
Three	20%
Four	0%
Don't know	40%

- Q28. [If Q33 was displayed] Now, thinking about the energy and water savings items that were provided in the kit - using a scale from 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential,” how influential were the following factors on your decision to install the items from the kit? *How influential was...*

The fact that the items were free

Response Option	Percent (n=84)
1- Not at all influential	1%
1	0%
2	0%
3	0%
4	0%
5	2%
6	2%
7	1%
8	10%
9	12%
10 - Extremely influential	71%
Don't know	0%

The fact that the items were mailed to your home

Response Option	Percent (n=84)
0- Not at all influential	1%
1	0%
2	0%
3	0%
4	0%
5	4%
6	2%
7	2%
8	5%
9	18%
10 - Extremely influential	68%

Don't know	0%
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Information provided by Duke Energy about how the items would save energy and water

Response Option	Percent (n=84)
0- Not at all influential	2%
1	0%
2	0%
3	0%
4	0%
5	8%
6	2%
7	7%
8	12%
9	16%
10 - Extremely influential	51%
Don't know	1%

Other information or advertisements from Duke Energy, including its website

Response Option	Percent (n=84)
0- Not at all influential	10%
1	0%
2	0%
3	0%
4	0%
5	7%
6	6%
7	6%
8	21%
9	14%
10 - Extremely influential	31%
Don't know	5%

- Q29. Since receiving your kit from Duke Energy, what **new** behaviors has your household adopted to help save energy at home? Please only consider new **behaviors** that your household has adopted since receiving the kit.

Response Option	Percent (n=114)*
Not applicable - no new behaviors since receiving kit	28%
Turn off lights when not in a room	46%
Turn off furnace when not home	9%
Turn off air conditioning when not home	17%
Changed thermostat settings to use less energy	42%
Used fans instead of air conditioning	25%
Turn off electronics when we are not using them	35%
Take shorter showers	23%
Turned water heat thermostat down	9%

Turn off water when brushing teeth	32%
Other	5%
Don't know	4%

*Multiple responses were allowed for this question

Verbatim "Other" Response	Count (n=6)
only used pipe tape	1
agree with duke enegy save energy	1
Installed new hi eff pool pump	1
replaced water lines with pvc	1
We are energy conscious so this probably made little difference.....slight if any.	1
Shades, front and back, depending on time of day and season	1

- Q30. [Ask if Q38 <> DON'T KNOW or NOT APPLICABLE]. On a scale of 0 to 10, where 0 means "not at all influential" and 10 means "extremely influential," how much influence did Duke Energy's kit and materials on saving energy have on your decision to [LIST ALL RESPONSES FROM Q38].

Response Option	Percent (n=78)
0 – Not at all influential	5%
1	3%
2	4%
3	1%
4	0%
5	8%
6	12%
7	15%
8	13%
9	5%
10 - Extremely influential	33%
Don't know	1%

- Q31. Since receiving your kit from Duke Energy, have you purchased and installed any other **products** or made any improvements to your home to help save energy?

Response Option	Percent (n=114)
Yes	33%
No	62%
Don't know	5%

- Q32. [If Q40 = YES] What **products** have you purchased and installed to help save energy in your home?

Response Option	Percent (n=37)*
Bought energy efficient appliances	19%
Moved into an ENERGY STAR home	3%
Bought efficient heating or cooling equipment	16%
Bought efficient windows	8%

Added insulation	16%
Sealed air leaks in windows, walls, or doors	30%
Sealed or insulated ducts	5%
Bought LEDs	38%
Bought CFLs	19%
Installed an energy efficient water heater	19%
None – no other actions taken	3%
Other	11%
Don't know	0%

*Multiple responses were allowed for this question

Verbatim Other Responses	Count (n=4)
Aerators and shower head	1
New thermostat, cut down on my furnace running so long . Really helped.	1
Kitchen Faucet	1
generator	1

Q33. [If Q41 = MOVED INTO AN ENERGY STAR HOME] Is Duke Energy still your gas or electricity utility?

Response Option	Count (n=114)
Yes	1
Not asked	113

Q34. [Ask if Q41 <> NONE, DON'T KNOW, or REFUSED] Did you get a rebate from Duke Energy for any of those products or services? If so, which ones? Please select all products and services for which you received Duke Energy rebates.

Response Option	Count (n=36) *
Bought energy efficient appliances	0
Moved into an ENERGY STAR home	0
Bought efficient heating or cooling equipment	1
Bought efficient windows	0
Added insulation	0
Sealed air leaks in windows, walls, or doors	0
Sealed or insulated ducts	0
Bought LEDs	1
Bought CFLs	2
Installed an energy efficient water heater	0
I did not get any Duke Rebates	29
Other	1
Don't know	2

*Multiple responses were allowed for this question.

Q35. [Ask if Q41 = BOUGHT LEDS] Duke Energy's website has a tool that helps you find discounted LEDs in your area. Duke Energy's website also has an online store where you can purchase discounted LEDs and have them shipped directly to your home. Did you use either of these Duke Energy services to acquire your LEDs?

Response Option	Percent (n=14)
Yes	36%
No	64%
Don't know	0%

- Q36. [Ask if Q41 = BOUGHT CFLS] Duke Energy's website has a tool that helps you find discounted CFLs in your area. Duke Energy's website also has an online store where you can purchase discounted CFLs and have them shipped to your home. Did you use either of these Duke Energy services to acquire your CFLs?

Response Option	Percent (n=7)
Yes	43%
No	57%
Don't know	0%

- Q37. [Ask if any item in Q41 was selected] On a scale of 0 to 10, where 0 means "not at all influential" and 10 means "extremely influential", how much influence did the Duke Energy Save Energy and Water Kit Program have on your decision to...

	0	1	2	3	4	5	6	7	8	9	10	Don't Know	Total (n)
Buy energy efficient appliances	0%	14%	0%	0%	0%	0%	0%	29%	57%	0%	0%	0%	7
Move into an ENERGY STAR home	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	1
Buy efficient heating or cooling equipment	17%	0%	0%	0%	0%	0%	17%	17%	0%	0%	33%	17%	6
Buy efficient windows	0%	0%	0%	0%	0%	0%	0%	33%	33%	0%	33%	0%	3
Add insulation	0%	0%	0%	0%	0%	0%	17%	33%	33%	0%	17%	0%	6
Seal air leaks	9%	0%	0%	0%	0%	18%	9%	9%	9%	0%	45%	0%	11
Seal ducts	50%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	2
Buy LEDs	14%	0%	0%	0%	0%	7%	0%	14%	29%	7%	29%	0%	14
Buy CFLs	14%	0%	0%	0%	0%	0%	14%	14%	14%	14%	29%	0%	7

Install an energy efficient water heater	29%	0%	0%	0%	0%	0%	0%	14%	0%	14%	43%	0%	7
Other	50%	0%	0%	0%	0%	0%	0%	0%	25%	0%	25%	0%	4

Q38. [Ask if Q41 = BOUGHT ENERGY EFFICIENT APPLIANCES and Q46_BUY ENERGY EFFICIENT APPLIANCES <> 0] What kinds of appliance(s) did you buy?

Response Option	Percent (n=7)*
Refrigerator	57%
Stand-alone freezer	0%
Dishwasher	29%
Clothes washer	86%
Clothes dryer	71%
Oven	29%
Microwave	29%
Other	0%
Don't know	0%
Refused	0%

*Multiple responses were allowed for this question

Q39. [Ask if Q47 <> DON'T KNOW OR REFUSED] Was the [INSERT Q47 RESPONSE] an ENERGY STAR or high-efficiency model?

Response Option	Microwave	Refrigerator	Stand-alone Freezer	Dishwasher	Clothes washer	Clothes dryer	Oven	Other
Yes	2	2	0	2	5	4	1	0
No	0	0	0	0	0	0	0	0
Don't know	0	2	0	0	1	1	0	0
Total	2	4	0	2	6	5	2	0

Q40. [Ask if Q47 = CLOTHES DRYER] Does the new clothes dryer use natural gas?

Response Option	Percent (n=5)
Yes	0%
No	100%
Don't know	0%
Refused	0%

Q41. [Ask if Q41 = BOUGHT EFFICIENT HEATING OR COOLING EQUIPMENT and Q46_BUY EFFICIENT HEATING OR COOLING EQUIPMENT > 0] What type of heating or cooling equipment did you buy?

Response Option	Percent (n=5)*
Central air conditioner	60%
Window/room air conditioner unit	0%
Wall air conditioner unit	0%

Air source heat pump	20%
Geothermal heat pump	0%
Boiler	0%
Furnace	20%
Wifi thermostat	20%
Other	0%
Don't know	0%
Refused	0%

*Multiple responses were allowed for this question

Q42. [Ask if Q50 = BOILER OR FURNACE] Does the new [INSERT Q50 RESPONSE] use natural gas?

Response Option	Percent (n=1)
Yes	0%
No	100%
Don't know	0%
Refused	0%

Q43. [Ask if Q50 <> WIFI-ENABLED THERMOSTAT, DON'T KNOW, OR REFUSED] Was the [INSERT Q50 RESPONSE] an ENERGY STAR or high-efficiency model?

Response Option	Other	Central air conditioner	Window / room air conditioner unit	Wall air conditioner unit	Air source heat pump	Geothermal heat pump	Boiler	Furnace
Yes	0	2	0	0	1	0	0	1
No	0	0	0	0	0	0	0	0
Don't know	0	1	0	0	0	0	0	0
Total	0	3	0	0	1	0	0	1

Q44. [Ask if Q41= BOUGHT EFFICIENT WINDOWS and Q46_BUY EFFICIENT WINDOWS >0] Do you know how many windows you installed?

Response Option	Percent (n=114)
Yes	1%
No	2%
Don't know	0%
Not asked	97%

Please specify how many you installed:

Verbatim Response	Percent (n=1)
11	100%

Q45. [Ask if Q41 = ADDED INSULATION and Q46_ADD INSULATION > 0] Please let us know what spaces you added insulation to. Also, let us know the proportion of

each space you added insulation to (for example, if you added insulation that covered your entire attic space, you would type in 100%).

Response Option	Percent (n=6)*
Attic	100%
Walls	17%
Below the floor	17%

*Multiple responses were allowed for this question

Attic

Verbatim Response	Count (n=2)
20	1
75	1

- Q46. [Ask if Q41 = BOUGHT LEDS and Q46_BUY LEDS > 0] Do you know how many LEDs you installed at your property?

Response Option	Percent (n=12)
Yes	100%
No	0%

[Please specify how many you installed in the box below:]

Verbatim Response	Count (n=12)
12	3
15	1
2	1
4	1
5	2
6	2
8	1
9	1

- Q47. [Ask if Q41 = BOUGHT CFLS and Q46_BUY CFLS > 0] Do you know how many CFLs you installed at your property?

Response Option	Percent (n=6)
Yes	83%
No	17%

[Please specify how many you installed in the box below:]

Verbatim Response	Count (n=5)
11	1
25	1
3	1
8	2

- Q48. [Ask if Q41 = INSTALLED AN ENERGY EFFICIENT WATER HEATER and Q46_INSTALL AN ENERGY EFFICIENT WATER HEATER > 0] Does the new water heater use natural gas?

Response Option	Percent (n=5)
Yes	20%
No	80%
Don't know	0%
Refused	0%

- Q49. [Ask if Q41 = INSTALLED AN ENERGY EFFICIENT WATER HEATER and Q46_INSTALL AN ENERGY EFFICIENT WATER HEATER > 0] Which of the following water heaters did you purchase?

Response Option	Percent (n=5)
A traditional water heater with a large tank that holds the hot water	40%
A tankless water heater that provides hot water on demand	60%
A solar water heater	0%
Other	0%
Don't know	0%
Refused	0%

- Q50. [Ask if Q41 = INSTALLED AN ENERGY EFFICIENT WATER HEATER and Q46_INSTALL AN ENERGY EFFICIENT WATER HEATER > 0] Is the new water heater an ENERGY STAR model?

Response Option	Percent (n=5)
Yes	80%
No	0%
Don't know	20%
Refused	0%

- Q51. Which of the following types of housing units would you say best describes your home? It is . . .?

Response Option	Percent (n=114)
Single-family detached house	81%
Single-family attached home (such as a townhouse or condo)	4%
Duplex, triplex or four-plex	0%
Apartment or condo with 5 units or more	0%
Manufactured or mobile home	13%
Other	1%
Prefer not to say	0%
Don't know	1%

Verbatim Other Response	Count (n=1)
Tri level house	1

Q52. How many showers are in your home? Please include both stand-up showers and bathtubs with showerheads.

Response Option	Percent (n=114)
One	22%
Two	67%
Three	11%
Four	1%
Five or more	0%
Don't know	0%

Q53. How many bathroom sink faucets are in your home? (Keep in mind that some bathrooms may have multiple bathroom sink faucets in them)

Response Option	Percent (n=114)
One	14%
Two	39%
Three	31%
Four	10%
Five	4%
Six	1%
Seven	2%
Eight or more	0%
Don't know	0%

Q54. How many kitchen faucets are in your home?

Response Option	Percent (n=114)
One	91%
Two	8%
Three	1%
Four or more	0%
Don't know	0%

Q55. How many square feet of living space are there in your residence, including bathrooms, foyers and hallways (exclude garages, unfinished basements, and unheated porches)?

Response Option	Percent (n=114)
500 to under 1,000 square feet	9%
1,000 to under 1,500 square feet	30%
1,500 to under 2,000 square feet	22%
2,000 to under 2,500 square feet	18%
2,500 to under 3,000 square feet	6%
Greater than 3,000 square feet	6%
Prefer not to say	1%
Don't know	9%

Q56. Do you or members of your household own your home, or do you rent it?

Own / buying	94%
Rent / lease	6%
Occupy rent-free	0%
Prefer not to say	0%
Don't know	0%

Q57. Including yourself, how many people currently live in your home year-round?

Response Option	Percent (n=114)
I live by myself	15%
Two people	45%
Three people	18%
Four people	8%
Five people	3%
Six people	1%
Seven people	1%
Eight or more people	0%
Prefer not to say	10%
Don't know	0%

Q58. What was your total annual household income for 2016, before taxes?

Response Option	Percent (n=114)
Under \$20,000	7%
\$20,000 to under \$30,000	13%
\$30,000 to under \$40,000	7%
\$40,000 to under \$50,000	8%
\$50,000 to under \$60,000	11%
\$60,000 to under \$75,000	5%
\$75,000 to under \$100,000	9%
\$100,000 to under \$150,000	6%
\$150,000 to under \$200,000	0%
\$200,000 or more	1%
Prefer not to say	28%
Don't know	4%

Q59. What is the highest level of education achieved among those living in your household?

Response Option	Percent (n=114)
Less than high school	1%
Some high school	3%
High school graduate or equivalent (such as GED)	17%
Trade or technical school	10%
Some college (including Associate degree)	22%
College degree (Bachelor's degree)	17%
Some graduate school	3%
Graduate degree, professional degree	11%
Doctorate	4%

Prefer not to say	13%
Don't know	0%

